The plug fans of the centrifugal series with GreenTech EC technology, already established in the market, are now even better!

Firstly, all fans above a 500-watt drive output can now be controlled by MODBUS and 0-10V. Secondly, gaps existing in the product range have been filled and the series has been expanded to greater diameters.

The sizes 630, 710, 800 and 900 are new. These have been equipped with a stable base frame that enables the entire unit to be decoupled from vibrations in the environment.

This makes it possible to achieve additional applications, not just in the heating and ventilation industry. The plug fans are principally intended for operation without a scroll housing.

All plug fans shown in the catalogue exceed the minimum efficiency requirements of the ErP Directive for fans, which take effect in 2013 and 2015.

Now there are 12 sizes available, with their outer diameters ranging from 250 to 900 mm, which are driven by energy-saving EC external rotor motors with drive capacities between 400 W and 6 kW.

The welded impellers with their 7 backward curved blades are made of aluminium as this minimises the bearing load of the motors and maximises durability with high rotational velocity. The position of the impellers on the EC external-rotor motors has been optimised too in terms of aerodynamics and installation requirements.

The complete plug fan series is available in the new release of the “Product selector” design program. This tool can be used to select, compare and document fans according to the required operating points. Via a DLL file the plug fans can be integrated into your fan selection programme.
# Table of contents

- New Plug Fans with EC motor ................................................................. 2
- GreenTech: The Green Company .......................................................... 4
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Sustainability is at the centre of our thoughts and actions. Out of conviction!

Eco-friendliness and sustainability have always been at the core of our thoughts and actions. For decades, we have worked according to the simple but strict creed of our co-founder Gerhard Sturm: “Each new product we develop has to be better than the last one in terms of economy and ecology.” GreenTech is the ultimate expression of our corporate philosophy.
**GreenTech is pro-active development.**
Even in the design phase, the materials and processes we use are optimised for the greatest possible eco-friendliness, energy balance and wherever possible – recyclability. We continually improve the material and performance of our products, as well as the flow and noise characteristics. At the same time, we significantly reduce energy consumption. Close co-operation with universities and scientific institutes and the professorship we endow in the area of power engineering and regenerative energies allows us to profit from the latest research findings in these fields – and at the same time ensure highly qualified young academics.

**GreenTech is eco-friendly production.**
GreenTech also stands for maximum energy efficiency in our production processes. There, the intelligent use of industrial waste heat and groundwater cooling, photovoltaics and, of course, our own cooling and ventilation technology are of the utmost importance. Our most modern plant, for instance, consumes 91% less energy than currently specified and required. In this way, our products contribute to protecting the environment, from their origin to their recyclable packaging.

**GreenTech is acknowledged and certified.**
Every step in our chain of production meets the stringent standards of environmental specialists and the public. The 2008 Environmental Prize of Baden-Württemberg, the Green Award 2009, the Energy Efficiency Award 2009 of the dena – to give just a few examples – testify to this. The environmental advantage gained in the performance of the products developed from our GreenTech philosophy can also be measured in the fulfilment of the most stringent energy and environmental standards. In many instances, our products are already well below the thresholds energy legislation will impose a few years from now – several times over.

**Our customers profit from this every day.**
The heart of GreenTech is future-oriented EC technology from ebm-papst. The EC technology at the core of our most efficient motors and fans allows efficiency of up to 90%, saves energy at a very high level, significantly extends service life and makes our products maintenance-free. These values pay off not only for the environment, but every cent also pays off for the user! All ebm-papst products – even those for which GreenTech EC technology does not (yet) make sense from an application viewpoint – feature the greatest possible connection of economy and ecology.
New Plug Fans with EC motor

Overview of curves

Size | Motor | Supply VAC | P* | Standard Type | F4-2 Type (1) | FS Type Hygiene devices (2) | Vibration-absorb. elem.
|------|-------|-----------|---|---------------|----------------|-----------------------------|-----------------------------
| 400  | M3S 150-FA | 3 – 380-480 | 2915 | R3G400-AF07-01 | K3G400-AF07-02  | K3G400-AF07-04  | K3G400-AF07-35  | --- |
| 450  | M3S 150-FA | 3 – 380-480 | 5250 | R3G450-AE08-01 | K3G450-AE08-02  | K3G450-AE08-04  | K3G450-AE08-35  | --- |
| 500  | M3S 150-FA | 3 – 380-480 | 8025 | R3G500-AF09-01 | K3G500-AF09-02  | K3G500-AF09-04  | K3G500-AF09-35  | --- |
| 630  | M3S 200-FA | 3 – 380-480 | 18400 | R3G630-AF12-01 | K3G630-AF12-02  | K3G630-AF12-04  | K3G630-AF12-35  | --- |
| 800  | M3S 200-FA | 3 – 380-480 | 30000 | R3G800-AF14-01 | K3G800-AF14-02  | K3G800-AF14-04  | K3G800-AF14-35  | --- |

(1) Increased corrosion protection:
The support bracket, mounting plate and impeller are coated in black, and the motor also features a black coating.

(2) Design of the hygiene devices:
The support bracket, mounting plate and impeller are coated in white, and the motor is coated in black, the fastening elements are made of stainless steel.
Additionally, and for selecting the correct fan, you can take advantage of the ebm-papst software "Product Selector" with integrated "Black-Box" module for integration in system configuration programmes on the customer side.

The new selection program gives you the ability to select plug fans based on the operating point. If multiple fans are in the specified power range, the aerodynamic and acoustic data displayed can be used to select and document the most suitable fan.

Additionally, the life cycle costs for the selected fans can be calculated. You can make your selection based on the operating point or on the type designation.

The data sheets, which can be created in PDF format, show not only the nominal data of the fan, but also the performance data in the specified operating point with the inlet and outlet side sound power levels across the octave band.

For more detailed information, simply ask your ebm-papst contact!
EC Centrifugal fan modules
K3G 250 to K3G 900

Text for tenders

ecm-papst high performance centrifugal fan modules
Single inlet; direct drive; 2D centrifugal impeller with circumferential diffuser mounted on an electronically commutated external-rotor motor with integrated electronics; backward curved impeller blades; inlet nozzle made of galvanised sheet steel with pressure relief; complete unit statically and dynamically balanced in two planes according to DIN / ISO 1940 and to balancing quality G 6.3; EC external-rotor motor with maintenance-free ball bearings and permanent lubrication; wide voltage input 1 to 200-277V, 50/60 Hz respectively 3 to 380-480V, 50/60Hz; unit can be operated on all standard Electricity Board networks at identical air performance; optimised motor technology; soft start; integrated current limitation; connection via brought-out variable cable connector (motor size 084) or via easy-to-mount and robust integrated terminal box made of aluminium with spring loaded terminals (motor sizes 112, 150 and 200); extremely compact electronics; with adjustable PID controller (motor sizes 112, 150 and 200); meets all necessary EMC directives and all requirements as to current reverse transfer; no complicated installation with shielded cables required; very low-noise commutation logic; 100% controllability. Motors with an output of 750 W or higher have the RS485/MODBUS RTU interface. If structure-borne noise needs to be decoupled, any such action has to be taken by the customer.

Optionally: Modules with higher protection against corrosion.

For technical details, dimensions and connection - see data sheet

Protective features
- Alarm relay with zero-potential change-over contacts (250 V AC/2 A, cos φ = 1)
- Locked-rotor protection
- Phase failure detection
- Soft start of motors
- Mains under-voltage detection
- Over-temperature protection of electronics and motor
- Short-circuit protection

Technical data
- Air flow $q_v = \ldots \text{m}^3/\text{h}$
- Static pressure $p_d = \ldots \text{Pa}$
- Nominal voltage range $U = \ldots \text{V}$
- Frequency $f = \ldots \text{Hz}$
- Fan speed $n = \ldots \text{rpm}$
- Input power $P_e = \ldots \text{kW}$
- Current draw $I = \ldots \text{A}$
- Noise level $L_p = \ldots \text{dBA}$
- Perm. ambient temperature $T = \ldots \degree \text{C}$
- Fan mass $= \ldots \text{kg}$
- Approvals

Fan type

For technical details, dimensions and connection - see data sheet
EC centrifugal fans
R3G 250 to R3G 900

Text for tenders

**ebm-papst high performance centrifugal fans**
Single inlet; direct drive; 2D centrifugal impeller with circumferential diffuser mounted on an electronically commutated external-rotor motor with integrated electronics; backward curved impeller blades; inlet nozzle made of galvanised sheet steel; complete unit statically and dynamically balanced in two planes according to DIN / ISO 1940 and to balancing quality G 6.3; EC external-rotor motor with maintenance-free ball bearings and permanent lubrication; wide voltage input 1~200-277V, 50/60 Hz respectively 3~380-480V, 50/60Hz; unit can be operated on all standard Electricity Board networks at identical air performance; optimised motor technology; soft start; integrated current limitation; connection via brought-out variable cable connector (motor size 084) or via easy-to-mount and robust integrated terminal box made of aluminium with spring loaded terminals (motor sizes 112, 150 and 200); extremely compact electronics; with adjustable PID controller (motor sizes 112, 150 and 200); meets all necessary EMC directives and all requirements as to current reverse transfer; no complicated installation with shielded cables required; very low-noise commutation logic; 100% controllability. Motors with an output of 750 W or higher have the RS485/MODBUS RTU interface.

For technical details, dimensions and connection - see data sheet

**Protective features**
- Alarm relay with zero-potential change-over contacts (250 V AC/2 A, cos φ = 1)
- Locked-rotor protection
- Phase failure detection
- Soft start of motors
- Mains under-voltage detection
- Over-temperature protection of electronics and motor
- Short-circuit protection

**Technical data**
- Air flow \( q_V \) = \( \ldots \) m³/h
- Static pressure \( p_{sf} \) = \( \ldots \) Pa
- Nominal voltage range \( U \) = \( \ldots \) V
- Frequency \( f \) = \( \ldots \) Hz
- Fan speed \( n \) = \( \ldots \) rpm
- Input power \( P_e \) = \( \ldots \) kW
- Current draw \( I \) = \( \ldots \) A
- Noise level \( L_p \) = \( \ldots \) dBA
- Perm. ambient temperature \( T \) = \( \ldots \) °C
- Fan mass = \( \ldots \) kg
- Direction of rotation = rechts
- Approvals = 

**Fan type**
EC centrifugal fan and modules
backward curved, Ø 250

- Material:
  - Support bracket: Steel, coated in black
  - Support plate: Sheet aluminium
  - Impeller: Sheet aluminium, welded
  - Rotor: Coated in black
  - Electronics enclosure: Die-cast aluminium

- Number of blades: 7
- Direction of rotation: Clockwise, seen on rotor
- Type of protection: IP 54 (acc. to EN 60529)
- Insulation class: "B"
- Mounting position: Shaft horizontal or rotor on bottom; rotor on top on request
- Condensate discharges: Rotor-side
- Mode of operation: Continuous operation (S1)
- Bearings: Maintenance-free ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>rpm</th>
<th>W</th>
<th>°C</th>
<th>p. 62</th>
</tr>
</thead>
<tbody>
<tr>
<td>*3G 250</td>
<td>M3G 084-DF</td>
<td>1~ 200-277</td>
<td>50/60</td>
<td>3000</td>
<td>450</td>
<td>2,80</td>
<td>-25..+40</td>
</tr>
</tbody>
</table>

subject to alterations

(1) Nominal data in operating point with maximum load and 230 VAC

### Curves

Air performance measured as per: ISO 5801,
Installation category A,
with ebm-papst inlet nozzle
without protection against accidental contact

Suction-side noise levels:
LWA as per ISO 13347,
LWA measured at 1 m distance to fan axis

The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.

With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 66 ff.
- **Technical features:**
  - PFC (passive)
  - Control input 0-10 VDC / PWM
  - Output 10 VDC max. 1.1 mA
  - Alarm relay
  - Over-temperature protected electronics / motor

- **EMC:**
  - Interference emission acc. to EN 61000-6-3
  - Interference immunity acc. to EN 61000-6-2
  - Harmonics acc. to EN 61000-3-2/3

- **Leakage current:** < 3.5 mA acc. to EN 61800-5-1

- **Cable exit:** Variable

- **Protection class:** I

- **Product conforming to standards:** EN 61800-5-1, CE

- **Approvals:** UL, CSA; VDE, CCC, GOST are applied for

---

#### Technical Data

<table>
<thead>
<tr>
<th>Centrifugal fan</th>
<th>Inlet nozzle with one pressure tap</th>
<th>Centrifugal module w. support bracket</th>
<th>Centrifugal module w. supp. bracket (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 250-AT39 -71</td>
<td>4.4 kg</td>
<td>25075-2-4013</td>
<td>K3G 250-AT39 -72</td>
</tr>
<tr>
<td></td>
<td>25075-2-4013</td>
<td>K3G 250-AT39 -72</td>
<td>K3G 250-AT39 -74</td>
</tr>
</tbody>
</table>

(2) Centrifugal module with higher protection against corrosion

---

**Observe the correct mounting position!**

**Install the support struts only vertically as shown in the view!**
EC centrifugal fan and modules
backward curved, Ø 250

- **Material:**
  - Support bracket: Steel, coated in black
  - Support plate: Sheet aluminium
  - Impeller: Sheet aluminium, welded
  - Rotor: Coated in black
  - Electronics enclosure: Die-cast aluminium

- **Number of blades:** 7
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** "B"
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>Nominal voltage range</th>
<th>Frequency</th>
<th>Speed (rpm)</th>
<th>Max. input power (1)</th>
<th>Max. current draw (1)</th>
<th>Perm. amb. temp.</th>
<th>Electr. connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>*3G 250</td>
<td>M3G 084-FA</td>
<td>1~ 200-277 50/60</td>
<td>3450</td>
<td>700</td>
<td>3,00</td>
<td>-25..+40</td>
<td>L7)</td>
<td></td>
</tr>
</tbody>
</table>

subject to alterations

(1) Nominal data in operating point with maximum load and 230 VAC

### Curves

<table>
<thead>
<tr>
<th>n rpm</th>
<th>P_a W</th>
<th>I A</th>
<th>LpA dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3450</td>
<td>469</td>
<td>2,07</td>
<td>85</td>
</tr>
<tr>
<td>3450</td>
<td>591</td>
<td>2,64</td>
<td>82</td>
</tr>
<tr>
<td>3450</td>
<td>700</td>
<td>3,00</td>
<td>78</td>
</tr>
<tr>
<td>3450</td>
<td>661</td>
<td>2,95</td>
<td>81</td>
</tr>
<tr>
<td>2890</td>
<td>268</td>
<td>1,18</td>
<td>81</td>
</tr>
<tr>
<td>2890</td>
<td>337</td>
<td>1,51</td>
<td>78</td>
</tr>
<tr>
<td>2890</td>
<td>401</td>
<td>1,79</td>
<td>74</td>
</tr>
<tr>
<td>2890</td>
<td>378</td>
<td>1,69</td>
<td>77</td>
</tr>
<tr>
<td>2300</td>
<td>135</td>
<td>0,60</td>
<td>76</td>
</tr>
<tr>
<td>2300</td>
<td>170</td>
<td>0,76</td>
<td>73</td>
</tr>
<tr>
<td>2300</td>
<td>202</td>
<td>0,90</td>
<td>69</td>
</tr>
<tr>
<td>2300</td>
<td>190</td>
<td>0,85</td>
<td>72</td>
</tr>
</tbody>
</table>

Air performance measured as per ISO 5801, Installation category A, with ebm-papst inlet nozzle without protection against accidental contact.

Suction-side noise levels LpA as per ISO 13347, LpA measured at 1 m distance to fan axis.

The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.

With any deviation to the standard setup, the specific values have to be checked and revised once installed or fitted!

For detailed information see page 66 ff.
- Technical features:
  - PFC (active)
  - Integrated PID controller
  - Control input 0-10 VDC / PWM
  - Input for sensor 0-10 V or 4-20 mA
- EMC: Interference emission acc. to EN 61000-6-3
  - Interference immunity acc. to EN 61000-6-2
- Harmonics acc. to EN 61000-3-2/3
- Leakage current: < 5,5 mA acc. to EN 61800-5-1
- Connection leads: Via terminal strip
- Protection class: I (acc. to EN 61800-5-1)
- Product conforming to standards: EN 61800-5-1, CE
- Approvals: VDE, UL, CSA, CCC, GOST are applied for

---

### Centrifugal Fan Specifications

<table>
<thead>
<tr>
<th>Centrifugal fan</th>
<th>Inlet nozzle with one pressure tap</th>
<th>Centrifugal module w. support bracket</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 250-AV29 -B1</td>
<td>5.6 kg</td>
<td>25075-2-4013</td>
</tr>
<tr>
<td>K3G 250-AV29 -B2</td>
<td>10.1 kg</td>
<td>43</td>
</tr>
<tr>
<td>K3G 250-AV29 -B4</td>
<td>10.1 kg</td>
<td>43</td>
</tr>
</tbody>
</table>

(2) Centrifugal module with higher protection against corrosion

---

- Cable gland M16x1.5 (3x):
  - Cable diameter min. 4 mm, max. 10 mm, tightening torque 2.5 ± 0.4 Nm
- Tightening torque 3.5 ± 0.5 Nm
- Observe the correct mounting position!
- Install the support struts only vertically as shown in the view!

---

Guard grille p. 60
Inlet nozzle p. 60
Electr. connection p. 63
EC centrifugal fan and modules
backward curved, Ø 280

- Material:
  - Support bracket: Steel, coated in black
  - Support plate: Sheet aluminium
  - Impeller: Sheet aluminium, welded
  - Rotor: Coated in black
  - Electronics enclosure: Die-cast aluminium

- Number of blades: 7
- Direction of rotation: Clockwise, seen on rotor
- Type of protection: IP 54 (acc. to EN 60529)
- Insulation class: "B"
- Mounting position: Shaft horizontal or rotor on bottom; rotor on top on request
- Condensate discharges: Rotor-side
- Mode of operation: Continuous operation (S1)
- Bearings: Maintenance-free ball bearings

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>rpm</th>
<th>W</th>
<th>A</th>
<th>°C</th>
<th>p. 62</th>
</tr>
</thead>
<tbody>
<tr>
<td>*3G 280</td>
<td>M3G 084-FA</td>
<td>1~ 200-277</td>
<td>50/60</td>
<td>2400</td>
<td>415</td>
<td>2,70</td>
<td>-25..+40</td>
<td>K1)</td>
</tr>
</tbody>
</table>

(subject to alterations)

(1) Nominal data in operating point with maximum load and 230 VAC

Curves

- Air performance measured as per ISO 5801
- Installation category A
- Without protective grille or inlet nozzle
- Shaft-side noise levels
- $L_{WA}$ as per ISO 13347
- $L_{WA}$ measured at 1 m distance to fan axis

The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.

With any deviation from the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 66 ff.
- **Technical features:**
  - PFC (passive)
  - Control input 0-10 VDC / PWM
  - Output 10 VDC max. 1.1 mA
  - Alarm relay
  - Over-temperature protected electronics / motor

- **EMC:**
  - Interference emission acc. to EN 61000-6-3
  - Interference immunity acc. to EN 61000-6-2
  - Harmonics acc. to EN 61000-3-2/3

- **Leakage current:** < 3.5 mA acc. to EN 61800-5-1
- **Cable exit:** Variable
- **Protection class:** I
- **Product conforming to standards:** EN 61800-5-1, CE
- **Approvals:** UL, CSA; VDE, CCC, GOST are applied for

---

### Technical Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Mass of centrifugal module with support bracket kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 280-AT04 -71</td>
<td>Inlet nozzle with one pressure tap</td>
<td>5.4</td>
</tr>
<tr>
<td>K3G 280-AT04 -72 / -74</td>
<td>Mass of centrifugal module w. support bracket</td>
<td>9.8</td>
</tr>
<tr>
<td>K3G 280-AT04 -74</td>
<td>Mass of centrifugal module w. sup. bracket (2)</td>
<td>9.8</td>
</tr>
</tbody>
</table>

(2) Centrifugal module with higher protection against corrosion

---

![Diagram of centrifugal fan and related components with dimensions and notes on correct mounting position and connection lines.]
EC centrifugal fan and modules
backward curved, Ø 280

- **Material:** Support bracket: Steel, coated in black
  Support plate: Sheet aluminium
  Impeller: Sheet aluminium, welded
  Rotor: Coated in black
  Electronics enclosure: Die-cast aluminium

- **Number of blades:** 7
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** “B”
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

## Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>Curve</th>
<th>Nominal voltage range</th>
<th>Frequency</th>
<th>Speed/rpm(1)</th>
<th>Max. input power(1)</th>
<th>Max. current draw(1)</th>
<th>Perm. amb. temp.</th>
<th>Electr. connection</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>3G 280</em></td>
<td>M3G 084-GF</td>
<td>ø</td>
<td>1–200-277</td>
<td>50/60</td>
<td>2800</td>
<td>715</td>
<td>3,10</td>
<td>-25..+40</td>
<td>L7</td>
</tr>
</tbody>
</table>

(1) Nominal data in operating point with maximum load and 230 VAC

### Curves

- Air performance measured as per: ISO 5801
- Installation category A
- with ebm-papst inlet nozzle
- without protection against accidental contact
- Suction-side noise levels: $L_{WA}$ as per ISO 13347
- $L_{WA}$ measured at 1 m distance to fan axis
- The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.
- With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 66 ff.
- **Technical features:**
  - PFC (active)
  - Integrated PID controller
  - Control input 0-10 VDC / PWM
  - Input for sensor 0-10 V or 4-20 mA
- **EMC:**
  - Interference emission acc. to EN 61000-6-3
  - Interference immunity acc. to EN 61000-6-2
  - Harmonics acc. to EN 61000-3-2/3
- **Leakage current:** < 5,5 mA acc. to EN 61800-5-1
- **Connection leads:** Via terminal strip
- **Protection class:** I (acc. to EN 61800-5-1)
- **Product conforming to standards:** EN 61800-5-1, CE
- **Approvals:** VDE, UL, CSA, CCC, GOST are applied for

<table>
<thead>
<tr>
<th>Centrifugal fan</th>
<th>kg</th>
<th>Inlet nozzle with one pressure tap</th>
<th>Centrifugal module w. support bracket</th>
<th>kg</th>
<th>Centrifugal module w. supp. bracket</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 280-AU06 -B1</td>
<td>6,8</td>
<td>28075-2-4013</td>
<td>K3G 280-AU06 -B2</td>
<td>11,4</td>
<td>K3G 280-AU06 -B4</td>
<td>11,4</td>
</tr>
</tbody>
</table>

(2) Centrifugal module with higher protection against corrosion

- Mass of centrifugal module w. support bracket: 11,4 kg
- Mass of centrifugal module w. support bracket: 11,4 kg

---

- **Cable gland:** M16x1,5 (3x):
  - Cable diameter: min. 4 mm, max. 10 mm,
  - Tightening torque 2.5 ± 0.4 Nm

- **Tightening torque 3.5 ± 0.5 Nm**

- **Pressure tap**

- **Observe the correct mounting position!**
  - Install the support struts only vertically as shown in the view!
EC centrifugal fan and modules
backward curved, Ø 280

- **Material**: Support bracket: Steel, coated in black
  Support plate: Sheet aluminium
  Impeller: Sheet aluminium, welded
  Rotor: Coated in black
  Electronics enclosure: Die-cast aluminium

- **Number of blades**: 7
- **Direction of rotation**: Clockwise, seen on rotor
- **Type of protection**: IP 54 (acc. to EN 60529)
- **Insulation class**: “B”
- **Mounting position**: Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges**: Rotor-side
- **Mode of operation**: Continuous operation (S1)
- **Bearings**: Maintenance-free ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>rpm</th>
<th>W</th>
<th>A</th>
<th>°C</th>
<th>p. 63</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>3G 280</em></td>
<td>M3G 084-GF</td>
<td>3– 380-480</td>
<td>50/60</td>
<td>3100</td>
<td>1000</td>
<td>1,60</td>
<td>-25..+60</td>
<td>L6</td>
</tr>
</tbody>
</table>

(subject to alterations)

(1) Nominal data in operating point with maximum load and 400 VAC

---

### Curves

<table>
<thead>
<tr>
<th>n (rpm)</th>
<th>Pₐ (W)</th>
<th>I (A)</th>
<th>Lₜ,A₂ (dB(A))</th>
</tr>
</thead>
<tbody>
<tr>
<td>3100</td>
<td>645</td>
<td>1,04</td>
<td>86</td>
</tr>
<tr>
<td>3100</td>
<td>852</td>
<td>1,35</td>
<td>83</td>
</tr>
<tr>
<td>3100</td>
<td>852</td>
<td>1,58</td>
<td>83</td>
</tr>
<tr>
<td>3100</td>
<td>1000</td>
<td>1,80</td>
<td>80</td>
</tr>
<tr>
<td>3100</td>
<td>921</td>
<td>1,46</td>
<td>83</td>
</tr>
<tr>
<td>2575</td>
<td>358</td>
<td>0,58</td>
<td>82</td>
</tr>
<tr>
<td>2575</td>
<td>482</td>
<td>0,78</td>
<td>79</td>
</tr>
<tr>
<td>2575</td>
<td>562</td>
<td>0,89</td>
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</tr>
<tr>
<td>2575</td>
<td>514</td>
<td>0,82</td>
<td>79</td>
</tr>
<tr>
<td>2045</td>
<td>180</td>
<td>0,29</td>
<td>77</td>
</tr>
<tr>
<td>2045</td>
<td>242</td>
<td>0,38</td>
<td>74</td>
</tr>
<tr>
<td>2045</td>
<td>282</td>
<td>0,45</td>
<td>71</td>
</tr>
<tr>
<td>2045</td>
<td>257</td>
<td>0,41</td>
<td>74</td>
</tr>
</tbody>
</table>

Air performance measured as per ISO 5801,
Installation category A,
with ebm-papst inlet nozzle
without protection against accidental contact

Suction-side noise levels
Lₜ,A as per ISO 13347,
Lₜ,A measured at 1 m distance to fan axis

The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.

With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 66 ff.
- **Technical features:**
  - PFC (passive)
  - Integrated PID controller
  - Control input 0-10 VDC / PWM
  - Input for sensor 0-10 V or 4-20 mA
- **EMC:**
  - Interference emission acc. to EN 61000-6-3
  - Interference immunity acc. to EN 61000-6-2
  - Harmonics acc. to EN 61000-3-2/3
- **Leakage current:** < 5.5 mA acc. to EN 61800-5-1
- **Connection leads:** Via terminal strip
- **Protection class:** I (acc. to EN 61800-5-1)
- **Product conforming to standards:** EN 61800-5-1, CE
- **Approvals:** VDE, UL, CSA, CCC, GOST are applied for

---

**Technical specifications:**

<table>
<thead>
<tr>
<th>Centrifugal fan</th>
<th>Inlet nozzle with one pressure tap</th>
<th>Centrifugal module w. support bracket</th>
<th>Mass of centrifugal module w. support bracket</th>
<th>Mass of centrifugal module w. support bracket</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 280-AU11 -C1</td>
<td>28075-2-4013</td>
<td>K3G 280-AU11 -C2</td>
<td>11.7</td>
<td>K3G 280-AU11 -C4</td>
</tr>
</tbody>
</table>

(2) Centrifugal module with higher protection against corrosion

---

**Technical drawing:**

- **Depth of screw 12-16 mm**
- **Tightening torque 3.5 ± 0.5 Nm**
- **Observe the correct mounting position!**
- **Install the support struts only vertically as shown in the view!**

---

**Product information:**

- **Cable gland M16x1.5 (3x):**
  - Cable diameter
  - Min. 4 mm, max. 10 mm, tightening torque 2.5 ± 0.4 Nm

---

**Connections:**

- **Plug_Fans_19_05_2011_EN_:G1G_170_deutsch_.qxd 19.05.2011 11:33 Seite 19
EC centrifugal fan and modules
backward curved, Ø 310

- Material: Support bracket: Steel, coated in black
  Support plate: Sheet steel, hot-galvanised
  Impeller: Sheet aluminium, welded
  Rotor: Coated in black
  Electronics enclosure: Die-cast aluminium

- Number of blades: 7
- Direction of rotation: Clockwise, seen on rotor
- Type of protection: IP 54 (acc. to EN 60529)
- Insulation class: “B”
- Mounting position: Shaft horizontal or rotor on bottom; rotor on top on request
- Condensate discharges: Rotor-side
- Mode of operation: Continuous operation (S1)
- Bearings: Maintenance-free ball bearings

Nominal data

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>*3G 310</td>
<td>M3G 112-EA</td>
<td>3- 380-480</td>
<td>50/60</td>
<td>2580</td>
<td>1000</td>
<td>1,60</td>
<td>-25..+55</td>
<td>L6</td>
<td></td>
</tr>
</tbody>
</table>

subject to alterations

(1) Nominal data in operating point with maximum load and 480 VAC

Curves

- Air performance measured as per: ISO 5801,
  Installation category A,
  with ebm-papst inlet nozzle
- Suction-side noise levels: LpA as per ISO 13347,
  LpA measured at 1 m distance
  to fan axes
- The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.

With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 66 ff.
- **Technical features:**
  - PFC (passive)
  - Integrated PID controller
  - Control input 0-10 VDC / PWM
  - Input for sensor 0-10 V or 4-20 mA
- **EMC:** Interference emission acc. to EN 61000-6-3
  - Interference immunity acc. to EN 61000-6-2
- **Leakage current:** < 3.5 mA acc. to EN 61800-5-1
- **Connection leads:** Via terminal strip
- **Protection class:** I (acc. to EN 61800-5-1)
- **Product conforming to standards:** CE
- **Approvals:** VDE, UL, CSA, CCC, GOST are applied for

<table>
<thead>
<tr>
<th>Centrifugal fan</th>
<th>kg</th>
<th>Inlet nozzle with one pressure tap</th>
<th>Centrifugal module w. support bracket</th>
<th>kg</th>
<th>Centrifugal module w. supp. bracket</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 310-AX52 -90</td>
<td>8.8</td>
<td>31575-2-4013</td>
<td>K3G 310-AX52 -90</td>
<td>16.7</td>
<td>K3G 310-AX52 -91</td>
<td>16.7</td>
</tr>
</tbody>
</table>

(2) Centrifugal module with higher protection against corrosion

---

Observe the correct mounting position!
Install the support struts only vertically as shown in the view!
EC centrifugal fan and modules
backward curved, Ø 310

- **Material:**
  - Support bracket: Steel, coated in black
  - Support plate: Sheet steel, hot-galvanised
  - Impeller: Sheet aluminium, welded
  - Rotor: Coated in black
  - Electronics enclosure: Die-cast aluminium

- **Number of blades:** 7
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** “B”
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>rpm</th>
<th>W</th>
<th>A</th>
<th>°C</th>
<th>p. 65</th>
</tr>
</thead>
<tbody>
<tr>
<td>*3G 310</td>
<td>M3G 112-EA</td>
<td>1</td>
<td>200-277</td>
<td>50/60</td>
<td>2850</td>
<td>1270</td>
<td>5,60</td>
<td>-25..+60</td>
</tr>
</tbody>
</table>

(subject to alterations)

(1) Nominal data in operating point with maximum load and 230 VAC

### Curves

<table>
<thead>
<tr>
<th>n</th>
<th>P_A</th>
<th>I</th>
<th>L_A dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>rpm</td>
<td>W</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2930</td>
<td>946</td>
<td>4.14</td>
<td>88</td>
</tr>
<tr>
<td>2895</td>
<td>1147</td>
<td>5.01</td>
<td>83</td>
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<tr>
<td>2850</td>
<td>1270</td>
<td>5.60</td>
<td>79</td>
</tr>
<tr>
<td>2850</td>
<td>1237</td>
<td>5.41</td>
<td>83</td>
</tr>
<tr>
<td>2430</td>
<td>529</td>
<td>2.34</td>
<td>84</td>
</tr>
<tr>
<td>2430</td>
<td>663</td>
<td>2.91</td>
<td>78</td>
</tr>
<tr>
<td>2430</td>
<td>743</td>
<td>3.28</td>
<td>77</td>
</tr>
<tr>
<td>2430</td>
<td>751</td>
<td>3.29</td>
<td>78</td>
</tr>
<tr>
<td>1955</td>
<td>299</td>
<td>1.36</td>
<td>78</td>
</tr>
<tr>
<td>1955</td>
<td>363</td>
<td>1.81</td>
<td>73</td>
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<td>1955</td>
<td>398</td>
<td>1.77</td>
<td>72</td>
</tr>
<tr>
<td>1955</td>
<td>400</td>
<td>1.78</td>
<td>73</td>
</tr>
</tbody>
</table>

Air performance measured as per ISO 5801,
Installation category A,
with ebm-papst inlet nozzle
without protection against accidental contact
Suction-side noise levels
L_A measured at 1 m distance to fan axis
The acoustic values given are only valid under the measurement conditions stated and may vary depending on the installation situation.

With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 66 ff.
**Technical features:**
- PFC (active)
- Integrated PID controller
- Control input 0-10 VDC / PWM
- Input for sensor 0-10 V or 4-20 mA
- **EMC:** Interference emission acc. to EN 61000-6-3
  Interference immunity acc. to EN 61000-6-2
  Harmonics acc. to EN 61000-3-2/3
- **Leakage current:** < 3.5 mA acc. to EN 61800-5-1
- **Connection leads:** Via terminal strip
- **Protection class:** I (acc. to EN 61800-5-1)
- **Product conforming to standards:** CE
- **Approvals:** VDE, UL, CSA, CCC, GOST are applied for

**EMC:**
- Interference emission acc. to EN 61000-6-3
- Interference immunity acc. to EN 61000-6-2
- Harmonics acc. to EN 61000-3-2/3

**Leakage current:**< 3.5 mA acc. to EN 61800-5-1

**Connection leads:** Via terminal strip

**Protection class:** I (acc. to EN 61800-5-1)

**Product conforming to standards:** CE

**Approvals:** VDE, UL, CSA, CCC, GOST are applied for

**Table:**

<table>
<thead>
<tr>
<th>Centrifugal fan</th>
<th>kg</th>
<th>Inlet nozzle with one pressure tap</th>
<th>Centrifugal module w. support bracket</th>
<th>kg</th>
<th>Centrifugal module w. suppl. bracket</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 310-AX54 -21</td>
<td>11.0</td>
<td>31575-2-4013</td>
<td>K3G 310-AX54 -22</td>
<td>19.4</td>
<td>K3G 310-AX54 -52</td>
<td>19.4</td>
</tr>
</tbody>
</table>

(2) Centrifugal module with higher protection against corrosion

---

**Diagram Notes:**
- Observe the correct mounting position!
- Install the support struts only vertically as shown in the view!
- Tightening torque 3.5 ± 0.5 Nm
- Depth of screw 12-16 mm
- Cable gland M20x1.5 (3x):
  - Cable diameter min. 4 mm, max. 10 mm,
  - tightening torque 4 ± 0.6 Nm
- Pressure tap
- Guard grille
- Inlet nozzle
- Elect. connection
**EC centrifugal fan and modules**

**backward curved, Ø 310**

- **Material:**
  - Support bracket: Steel, coated in black
  - Support plate: Sheet steel, hot-galvanised
  - Impeller: Sheet aluminium, welded
  - Rotor: Coated in black
  - Electronics enclosure: Die-cast aluminium

- **Number of blades:** 7

- **Direction of rotation:** Clockwise, seen on rotor

- **Type of protection:** IP 54 (acc. to EN 60529)

- **Insulation class:** “B”

- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request

- **Condensate discharges:** Rotor-side

- **Mode of operation:** Continuous operation (S1)

- **Bearings:** Maintenance-free ball bearings

**Nominal data**

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>Frequency</th>
<th>Speed(rpm)</th>
<th>Max. input power(1)</th>
<th>Max. current draw(1)</th>
<th>Perm. amb. temp.</th>
<th>Electr. connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>*3G 310</td>
<td>M3G 112-GA</td>
<td>3~</td>
<td>380-480</td>
<td>50/60</td>
<td>3140</td>
<td>1650</td>
<td>2,50</td>
<td>-25..+60</td>
<td>L5</td>
</tr>
</tbody>
</table>

(subject to alterations)

(1) Nominal data in operating point with maximum load and 400 VAC

**Curves**

Air performance measured as per: ISO 5801, Installation category A, with ebm-papst inlet nozzle without protection against accidental contact

Suction-side noise levels: LpA as per ISO 13347, LpA measured at 1 m distance to fan axis

The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.

With any deviation to the standard setup, the specific values have to be checked and re-viewed once installed or fitted!

For detailed information see page 66 ff.
- **Technical features:**
  - PFC (passive)
  - Integrated PID controller
  - Control input 0-10 VDC bzw. 4-20 mA
  - Input for sensor 0-10 V or 4-20 mA
  - **EMC:** Interference emission acc. to EN 61000-6-3
    Interference immunity acc. to EN 61000-6-2
    Harmonics acc. to EN 61000-3-2/3
  - **Leakage current:** < 3,5 mA acc. to EN 61800-5-1
  - **Connection leads:** Via terminal strip
  - **Protection class:** I (acc. to EN 61800-5-1)
  - **Product conforming to standards:** CE
  - **Approvals:** VDE, UL, CSA, CCC, GOST are applied for

<table>
<thead>
<tr>
<th>Centrifugal fan</th>
<th>kg</th>
<th>Inlet nozzle w. pressure tap</th>
<th>Mass of centrifugal module w. supp. bracket</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 310-BB49 -01</td>
<td>12.6</td>
<td>31575-2-4013</td>
<td>21.0</td>
</tr>
<tr>
<td>K3G 310-BB49 -02</td>
<td>21.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>K3G 310-BB49 -32</td>
<td>21.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(2) Centrifugal module with higher protection against corrosion

**Guard grille**: p. 60
**Inlet nozzle**: p. 60
**Electr. connection**: p. 64
EC centrifugal fan and modules
backward curved, Ø 310

- Material:
  Support bracket: Steel, coated in black
  Support plate: Sheet steel, hot-galvanised
  Impeller: Sheet aluminium, welded
  Rotor: Coated in black
  Electronics enclosure: Die-cast aluminium

- Number of blades: 7
- Direction of rotation: Clockwise, seen on rotor
- Type of protection: IP 54 (acc. to EN 60529)
- Insulation class: “B”
- Mounting position: Shaft horizontal or rotor on bottom; rotor on top on request
- Condensate discharges: Rotor-side
- Mode of operation: Continuous operation (S1)
- Bearings: Maintenance-free ball bearings

Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>Frequency</th>
<th>Speed/rpm(1)</th>
<th>Max. input power(1)</th>
<th>Max. current draw(1)</th>
<th>Perm. amb. temp.</th>
<th>Biphase connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>*3G 310</td>
<td>M3G 112-VA</td>
<td>3~</td>
<td>380-480</td>
<td>50/60</td>
<td>4100</td>
<td>2915</td>
<td>4,50</td>
<td>-25..+40</td>
<td>L5</td>
</tr>
</tbody>
</table>

subject to alterations

(1) Nominal data in operating point with maximum load and 400 VAC

Curves

- Air performance measured as per ISO 5801, Installation category A, without protection against accidental contact
- Suction-side noise levels: LWA as per ISO 13347, LpA measured at 1 m distance to fan axis
- The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.
- With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 66 ff.
- Technical features:
  - PFC (passive)
  - Integrated PID controller
  - Control input 0-10 VDC bzw. 4-20 mA
  - Input for sensor 0-10 V or 4-20 mA
- EMC: Interference emission acc. to EN 61000-6-3
  Interference immunity acc. to EN 61000-6-2
  Harmonics acc. to EN 61000-3-2/3
- Leakage current: < 5.5 mA acc. to EN 61800-5-1
- Connection leads: Via terminal strip
- Protection class: 1 (acc. to EN 61800-5-1)
- Product conforming to standards: CE
- Approvals: VDE, UL, CSA, CCC, GOST are applied for

<table>
<thead>
<tr>
<th>Centrifugal fan</th>
<th>kg</th>
<th>Inlet nozzle with one pressure tap</th>
<th>Centrifugal module w. support bracket</th>
<th>kg</th>
<th>Centrifugal module w. supp. bracket</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 310-AZ88 -01</td>
<td>15.0</td>
<td>31575-1-4013</td>
<td>K3G 310-AZ88 -02</td>
<td>24.2</td>
<td>K3G 310-AZ88 -32</td>
<td>24.2</td>
</tr>
</tbody>
</table>

(2) Centrifugal module with higher protection against corrosion

- Depth of screw 12-16 mm
- Tightening torque 3.5 ± 0.5 Nm
- Observe the correct mounting position!
- Install the support struts only vertically as shown in the view!
EC centrifugal fan and modules
backward curved, Ø 355

- **Material**: Support bracket: Steel, coated in black
  Support plate: Sheet steel, hot-galvanised
  Impeller: Sheet aluminium, welded
  Rotor: Coated in black
  Electronics enclosure: Die-cast aluminium

- **Number of blades**: 7
- **Direction of rotation**: Clockwise, seen on rotor
- **Type of protection**: IP 54 (acc. to EN 60529)
- **Insulation class**: “B”
- **Mounting position**: Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges**: Rotor-side
- **Mode of operation**: Continuous operation (S1)
- **Bearings**: Maintenance-free ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>Nominal voltage range</th>
<th>Frequency</th>
<th>Speed (rpm)</th>
<th>Max. input power</th>
<th>Max. current draw</th>
<th>Perm. amb. temp.</th>
<th>Electr. connection</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>3G 355</em></td>
<td>M3G112-EA</td>
<td>380-480 VAC</td>
<td>50/60</td>
<td>2140</td>
<td>1000</td>
<td>1,70</td>
<td>-25...+60</td>
<td>L6</td>
</tr>
</tbody>
</table>

(subject to alterations)

| (1) Nominal data in operating point with maximum load and 480 VAC |

### Curves

- Air performance measured as per ISO 5801, Installation category A, with ebm-papst inlet nozzle, without protection against accidental contact
- Suction-side noise levels, $L_{WA}$ as per ISO 13347, $L_{WA}$ measured at 1 m distance to fan axis
- The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.

With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 66 ff.
- **Technical features:**
  - PFC (passive)
  - Integrated PID controller
  - Control input 0-10 VDC / PWM
  - Input for sensor 0-10 V or 4-20 mA
  - **EMC:** Interference emission acc. to EN 61000-6-3
  - Interference immunity acc. to EN 61000-6-2
  - Harmonics acc. to EN 61000-3-2/3
- **Leakage current:** < 3.5 mA acc. to EN 61800-5-1
- **Connection leads:** Via terminal strip
- **Protection class:** I (acc. to EN 61800-5-1)
- **Product conforming to standards:** CE
- **Approvals:** VDE, UL, CSA, CCC, GOST are applied for

### Centrifugal fan

<table>
<thead>
<tr>
<th>Centrifugal fan</th>
<th>kg</th>
<th>Inlet nozzle with one pressure tap</th>
<th>Centrifugal module w. support bracket</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 355-AX56 -90</td>
<td>9.4</td>
<td>35675-2-4013</td>
<td>K3G 355-AX56 -90</td>
<td>17.4</td>
</tr>
<tr>
<td>K3G 355-AX56 -91</td>
<td>17.4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(2) Centrifugal module with higher protection against corrosion

- **Cable gland:**
  - M16x1.5 (3x):
  - Cable diameter min. 4 mm, max. 10 mm,
  - Tightening torque 2.5 ± 0.4 Nm

- **Depth of screw 12-16 mm**
- **Tightening torque 3.5 ± 0.5 Nm**

- **Observe the correct mounting position!**
- **Install the support struts only vertically as shown in the view!**
EC centrifugal fan and modules
backward curved, Ø 355

- **Material:**
  - Support bracket: Steel, coated in black
  - Support plate: Sheet steel, hot-galvanised
  - Impeller: Sheet aluminium, welded
  - Rotor: Coated in black
  - Electronics enclosure: Die-cast aluminium

- **Number of blades:** 7
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** "B"
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>Nominal voltage range</th>
<th>Frequency</th>
<th>Speed rpm</th>
<th>Max. input power W</th>
<th>Max. current draw A</th>
<th>Perm. amb. temp °C</th>
<th>Electr. connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>*3G 355</td>
<td>M3G 112-GA</td>
<td>1~ 200-277 50/60</td>
<td>2450</td>
<td>1400</td>
<td>6,00</td>
<td>-25...+50</td>
<td>L0</td>
<td></td>
</tr>
</tbody>
</table>

(subject to alterations) (1) Nominal data in operating point with maximum load and 230 VAC

### Curves

<table>
<thead>
<tr>
<th>RPM</th>
<th>W</th>
<th>A</th>
<th>dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1400</td>
<td>2450</td>
<td>998</td>
<td>4.33</td>
</tr>
<tr>
<td>1400</td>
<td>2440</td>
<td>1232</td>
<td>5.35</td>
</tr>
<tr>
<td>1400</td>
<td>2450</td>
<td>1400</td>
<td>6.00</td>
</tr>
<tr>
<td>1400</td>
<td>2440</td>
<td>1344</td>
<td>5.84</td>
</tr>
<tr>
<td>2035</td>
<td>715</td>
<td>1640</td>
<td>5.11</td>
</tr>
<tr>
<td>2035</td>
<td>715</td>
<td>1640</td>
<td>3.72</td>
</tr>
<tr>
<td>2035</td>
<td>715</td>
<td>1640</td>
<td>3.52</td>
</tr>
<tr>
<td>1630</td>
<td>289</td>
<td>1630</td>
<td>1.25</td>
</tr>
<tr>
<td>1630</td>
<td>289</td>
<td>1630</td>
<td>1.80</td>
</tr>
<tr>
<td>1630</td>
<td>289</td>
<td>1630</td>
<td>1.91</td>
</tr>
<tr>
<td>1630</td>
<td>289</td>
<td>1630</td>
<td>1.81</td>
</tr>
</tbody>
</table>

Air performance measured as per ISO 5801, installation category A, with ebm-papst inlet nozzle, without protection against accidental contact.

Suction-side noise levels: LWA as per ISO 13347, LWA measured at 1 m distance to fan axis.

The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.

With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 66 ff.
Technical features:
- PFC (active)
- Integrated PID controller
- Control input 0-10 VDC / PWM
- Input for sensor 0-10 V or 4-20 mA
- Line undervoltage detection
- Motor current limitation
- Output 20 VDC (±20 %) max. 50 mA
- Output 10 VDC (+10 %) max. 10 mA
- RS485 MODBUS
- Alarm relay
- Over-temperature protected electronics / motor
- Locked-rotor protection
- Soft start
- Control input 0-10 VDC / PWM
- RS485 MODBUS
- Locked-rotor protection
- Soft start

EMC:
- Interference emission acc. to EN 61000-6-3
- Interference immunity acc. to EN 61000-6-2
- Harmonics acc. to EN 61000-3-2/3

Leakage current:
- < 3.5 mA acc. to EN 61800-5-1

Connection leads:
- Via terminal strip

Protection class:
- I (acc. to EN 61800-5-1)

Product conforming to standards:
- CE
- Approvals: VDE, UL, CSA, CCC, GOST are applied for

---

**Centrifugal fan**

<table>
<thead>
<tr>
<th>Model</th>
<th>Mass kg</th>
<th>Inlet nozzle with one pressure tap kg</th>
<th>Centrifugal module w. support bracket kg</th>
<th>Mass of centrifugal module w. support bracket kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 355-AY43 -21</td>
<td>14.0</td>
<td>35675-2-4013</td>
<td>K3G 355-AY43 -22</td>
<td>22.4</td>
</tr>
<tr>
<td>K3G 355-AY43 -22</td>
<td>22.4</td>
<td>K3G 355-AY43 -52</td>
<td></td>
<td>22.4</td>
</tr>
</tbody>
</table>

(2) Centrifugal module with higher protection against corrosion

---

![Diagram of centrifugal fan and module with dimensions](Image)

- **Depth of screw 12-16 mm**
- **Tightening torque 3.5 ± 0.5 Nm**
- **Observe the correct mounting position!**
  - Install the support struts only vertically as shown in the view!

---

Guard grille p. 60  
Inlet nozzle p. 60  
Elect. connection p. 65
EC centrifugal fan and modules
backward curved, Ø 355

- **Material:** Support bracket: Steel, coated in black
  Support plate: Sheet steel, hot-galvanised
  Impeller: Sheet aluminium, welded
  Rotor: Coated in black
  Electronics enclosure: Die-cast aluminium
- **Number of blades:** 7
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** “B”
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>rpm</th>
<th>W</th>
<th>A</th>
<th>°C</th>
<th>p. 64</th>
</tr>
</thead>
<tbody>
<tr>
<td>3G 355</td>
<td>M3G 112-GA</td>
<td>3~</td>
<td>380-480</td>
<td>60/60</td>
<td>2600</td>
<td>1700</td>
<td>2,60</td>
<td>-25..+40</td>
</tr>
</tbody>
</table>

subject to alterations
(1) Nominal data in operating point with maximum load and 480 VAC

### Curves

<table>
<thead>
<tr>
<th>n</th>
<th>P a</th>
<th>I</th>
<th>LWA dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2600</td>
<td>1140</td>
<td>1,74</td>
<td>92</td>
</tr>
<tr>
<td>2600</td>
<td>1510</td>
<td>2,30</td>
<td>83</td>
</tr>
<tr>
<td>2600</td>
<td>1700</td>
<td>2,60</td>
<td>79</td>
</tr>
<tr>
<td>2600</td>
<td>1594</td>
<td>2,42</td>
<td>83</td>
</tr>
<tr>
<td>1940</td>
<td>436</td>
<td>0,73</td>
<td>84</td>
</tr>
<tr>
<td>1910</td>
<td>541</td>
<td>0,88</td>
<td>76</td>
</tr>
<tr>
<td>1885</td>
<td>533</td>
<td>0,95</td>
<td>73</td>
</tr>
<tr>
<td>1905</td>
<td>558</td>
<td>0,91</td>
<td>76</td>
</tr>
<tr>
<td>1330</td>
<td>194</td>
<td>0,40</td>
<td>76</td>
</tr>
<tr>
<td>1315</td>
<td>226</td>
<td>0,45</td>
<td>70</td>
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<tr>
<td>1305</td>
<td>239</td>
<td>0,47</td>
<td>66</td>
</tr>
<tr>
<td>1305</td>
<td>236</td>
<td>0,46</td>
<td>66</td>
</tr>
</tbody>
</table>

Air performance measured as per: ISO 5801,
Installation category A,
with ebm-papst inlet nozzle
without protection against accidental contact

Suction-side noise levels:
LWA as per ISO 13347,
LWA measured at 1 m distance
to fan axis

The acoustic values given are only valid under the measurement conditions listed and
may vary depending on the installation situation.

With any deviation to the standard setup, the specific values
have to be checked and reviewed once installed or fitted!

For detailed information see page 66 ff.
- **Technical features:**
  - PFC (passive)
  - Integrated PID controller
  - Control input 0-10 VDC bzw. 4-20 mA
  - Input for sensor 0-10 V or 4-20 mA
- **EMC:** Interference emission acc. to EN 61000-6-3
  Interference immunity acc. to EN 61000-6-2
  Harmonics acc. to EN 61000-3-2/3
- **Leakage current:** < 5,5 mA acc. to EN 61800-5-1
- **Connection leads:** Via terminal strip
- **Protection class:** I (acc. to EN 61800-5-1)
- **Product conforming to standards:** CE
- **Approvals:** VDE, UL, CSA, CCC, GOST are applied for

<table>
<thead>
<tr>
<th>Centrifugal fan</th>
<th>kg</th>
<th>Inlet nozzle with one pressure tap</th>
<th>kg</th>
<th>Centrifugal module with support bracket</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 355-AY40 -01</td>
<td>13.1</td>
<td>35675-2-4013</td>
<td>23.4</td>
<td>K3G 355-AY40 -02</td>
<td>23.4</td>
</tr>
<tr>
<td>(2) Centrifugal module with higher protection against corrosion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Cable gland M20x1.5 (3x):**
  - Cable diameter min. 4 mm, max. 10 mm,
  - tightening torque 4 ± 0.6 Nm

- **Pressure tap**
- **Guard grille** p. 60
- **Inlet nozzle** p. 60
- **Electr. connection** p. 64

- **Observe the correct mounting position!** Install the support struts only vertically as shown in the view!
EC centrifugal fan and modules
backward curved, Ø 400

- **Material:** Support bracket: Steel, coated in black
  Support plate: Sheet steel, hot-galvanised
  Impeller: Sheet aluminium, welded
  Rotor: Coated in black
  Electronics enclosure: Die-cast aluminium

- **Number of blades:** 7
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** "B"
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

---

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>rpm</th>
<th>W</th>
<th>A</th>
<th>°C</th>
<th>p.</th>
</tr>
</thead>
<tbody>
<tr>
<td>*3G 400</td>
<td>M3G 112-VA</td>
<td>3-</td>
<td>380-480</td>
<td>50/60</td>
<td>2180</td>
<td>1850</td>
<td>2,90</td>
<td>-25..+50</td>
</tr>
</tbody>
</table>

(subject to alterations)

(1) Nominal data in operating point with maximum load and 400 VAC.

---

### Curves

<table>
<thead>
<tr>
<th>n rpm</th>
<th>P A W</th>
<th>I A</th>
<th>LpA dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2180</td>
<td>1178</td>
<td>1,81</td>
<td>89</td>
</tr>
<tr>
<td>2180</td>
<td>1748</td>
<td>2,66</td>
<td>82</td>
</tr>
<tr>
<td>2180</td>
<td>1850</td>
<td>2,90</td>
<td>81</td>
</tr>
<tr>
<td>2180</td>
<td>1838</td>
<td>2,49</td>
<td>84</td>
</tr>
<tr>
<td>1850</td>
<td>720</td>
<td>1,10</td>
<td>85</td>
</tr>
<tr>
<td>1850</td>
<td>1063</td>
<td>1,62</td>
<td>78</td>
</tr>
<tr>
<td>1850</td>
<td>1132</td>
<td>1,72</td>
<td>77</td>
</tr>
<tr>
<td>1850</td>
<td>1001</td>
<td>1,52</td>
<td>80</td>
</tr>
<tr>
<td>1470</td>
<td>361</td>
<td>0,55</td>
<td>80</td>
</tr>
<tr>
<td>1470</td>
<td>533</td>
<td>0,81</td>
<td>73</td>
</tr>
<tr>
<td>1470</td>
<td>568</td>
<td>0,86</td>
<td>72</td>
</tr>
<tr>
<td>1470</td>
<td>502</td>
<td>0,76</td>
<td>75</td>
</tr>
</tbody>
</table>

Air performance measured as per: ISO 5801,
Installation category A,
with ebm-papst inlet nozzle
without protection against accidental contact
Suction-side noise levels
LpAa as per ISO 13347,
LpA measured at 1 m distance to fan axis
The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.

With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 66 ff.
Technical features:
- PFC (passive)
- Integrated PID controller
- Control input 0-10 VDC or 4-20 mA
- Input for sensor 0-10 V or 4-20 mA

EMC: Interference emission acc. to EN 61000-6-3
Interference immunity acc. to EN 61000-6-2
Harmonics acc. to EN 61000-3-2/3

Leakage current: < 3.5 mA acc. to EN 61800-5-1
Connection leads: Via terminal strip
Protection class: I (acc. to EN 61800-5-1)
Product conforming to standards: CE
Approvals: VDE, UL, CSA, CCC, GOST are applied for

<table>
<thead>
<tr>
<th>Centrifugal fan</th>
<th>kg</th>
<th>Inlet nozzle with one pressure tap</th>
<th>Centrifugal module w. support bracket</th>
<th>kg</th>
<th>Centrifugal module w. supp. bracket</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 400-AY87 -01</td>
<td>15.6</td>
<td></td>
<td>K3G 400-AY87 -02</td>
<td>26.0</td>
<td>K3G 400-AY87 -32</td>
<td>26.0</td>
</tr>
</tbody>
</table>

(2) Centrifugal module with higher protection against corrosion

Observe the correct mounting position!
Install the support struts only vertically as shown in the view!
EC centrifugal fan and modules
backward curved, Ø 400

- **Material:**
  - Support bracket: Steel, coated in black
  - Support plate: Sheet steel, hot-galvanised
  - Impeller: Sheet aluminium, welded
  - Rotor: Coated in black
  - Electronics enclosure: Die-cast aluminium

- **Number of blades:** 7
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** “F”
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>Nominal voltage range</th>
<th>Frequency</th>
<th>Speed (rpm)</th>
<th>Max. input power (W)</th>
<th>Max. current (A)</th>
<th>Perm. amb. temp. (°C)</th>
<th>Electr. connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>*3G 400</td>
<td>M3G 150-FF</td>
<td>3~ 380-480 VAC 50/60</td>
<td>2550</td>
<td>3000</td>
<td>4,60</td>
<td>-25..+60</td>
<td>L5</td>
<td></td>
</tr>
</tbody>
</table>

(subject to alterations)

(1) Nominal data in operating point with maximum load and 480 VAC

### Curves

<table>
<thead>
<tr>
<th>n (rpm)</th>
<th>P_n (W)</th>
<th>I (A)</th>
<th>L_pA (dB(A))</th>
</tr>
</thead>
<tbody>
<tr>
<td>2550</td>
<td>1989</td>
<td>3,03</td>
<td>93</td>
</tr>
<tr>
<td>2550</td>
<td>2578</td>
<td>3,92</td>
<td>87</td>
</tr>
<tr>
<td>2550</td>
<td>3000</td>
<td>4,80</td>
<td>85</td>
</tr>
<tr>
<td>2550</td>
<td>2890</td>
<td>4,41</td>
<td>87</td>
</tr>
<tr>
<td>2115</td>
<td>1135</td>
<td>1,73</td>
<td>89</td>
</tr>
<tr>
<td>2115</td>
<td>1471</td>
<td>2,24</td>
<td>93</td>
</tr>
<tr>
<td>2115</td>
<td>1709</td>
<td>2,61</td>
<td>91</td>
</tr>
<tr>
<td>2115</td>
<td>1649</td>
<td>2,52</td>
<td>93</td>
</tr>
<tr>
<td>1650</td>
<td>569</td>
<td>0,87</td>
<td>84</td>
</tr>
<tr>
<td>1680</td>
<td>737</td>
<td>1,12</td>
<td>78</td>
</tr>
<tr>
<td>1680</td>
<td>857</td>
<td>1,31</td>
<td>76</td>
</tr>
<tr>
<td>1680</td>
<td>826</td>
<td>1,26</td>
<td>78</td>
</tr>
</tbody>
</table>

Air performance measured as per: ISO 5801,
Installation category A,
with ebm-papst inlet nozzle
without protection against accidental contact

Suction-side noise levels:
L_pA as per ISO 13347,
L_pA measured at 1 m distance to fan axis

The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.

With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 66 ff.
- Technical features:
  - PFC (passive)
  - Integrated PID controller
  - Control input 0-10 VDC bzw. 4-20 mA
  - Input for sensor 0-10 V or 4-20 mA
- EMC: Interference emission acc. to EN 61000-6-3
  Interference immunity acc. to EN 61000-6-2
  Harmonics acc. to EN 61000-3-2/3
- Leakage current: < 5.5 mA acc. to EN 61800-5-1
- Connection leads: Via terminal strip
- Protection class: I (acc. to EN 61800-5-1)
- Product conforming to standards: CE
- Approvals: UL, CSA, GOST

---

## Technical Features

### Centrifugal fan

**R3G 400-AQ23 -01**

- Mass of centrifugal module with support bracket: 21.7 kg
- Mass of centrifugal module w. supp. bracket: 32.3 kg

<table>
<thead>
<tr>
<th>Centrifugal fan</th>
<th>Mass of centrifugal module w. support bracket</th>
<th>Mass of centrifugal module w. supp. bracket</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 400-AQ23 -01</td>
<td>21.7 kg</td>
<td>32.3 kg</td>
</tr>
<tr>
<td>K3G 400-AQ23 -01</td>
<td>32.3 kg</td>
<td>32.3 kg</td>
</tr>
</tbody>
</table>

---

### Additional Information

- **Cable gland M20x1.5 (3x):**
  - Cable diameter min. 4 mm, max. 10 mm,
  - Tightening torque 4 ± 0.6 Nm
- **Depth of screw max. 25 mm**
- **Tightening torque 3.5 ± 0.5 Nm**
- **Observe the correct mounting position!**
  - Install the support struts only vertically as shown in the view!
EC centrifugal fan and modules
backward curved, Ø 450

- **Material:**
  - Support bracket: Steel, coated in black
  - Support plate: Sheet steel, hot-galvanised
  - Impeller: Sheet aluminium, welded
  - Rotor: Coated in black
  - Electronics enclosure: Die-cast aluminium

- **Number of blades:** 7
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** "B"
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>Frequency</th>
<th>Speed [rpm(1)]</th>
<th>Max. input power [W(1)]</th>
<th>Max. current draw [A(1)]</th>
<th>Perm. amb. temp. [°C]</th>
<th>Electr. connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>*3G 450</td>
<td>M3G112-VA</td>
<td>3~</td>
<td>380-480</td>
<td>50/60</td>
<td>1750</td>
<td>1615</td>
<td>2,50</td>
<td>-25..+50</td>
<td>L5)</td>
</tr>
</tbody>
</table>

subject to alterations

(1) Nominal data in operating point with maximum load and 400 VAC

### Curves

- Air performance measured as per: ISO 5801,
  Installation category A,
  with ebm-papst inlet nozzle
  without protection against accidental contact
- Suction-side noise levels:
  $L_{WA}$ as per ISO 13347,
  $L_{WA}$ measured at 1 m distance to fan axis
- The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.
- With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 66 ff.
**Technical features:**
- PFC (passive)
- Integrated PID controller
- Control input 0-10 VDC, max. 20 mA
- Control input 0-10 V or 4-20 mA
- **EMC:** Interference emission acc. to EN 61000-6-3
  Interference immunity acc. to EN 61000-6-2
- Harmonics acc. to EN 61000-3-2/3
- **Leakage current:** < 3.5 mA acc. to EN 61800-3-1
- **Connection leads:** Via terminal strip
- **Protection class:** I (acc. to EN 61800-5-1)
- **Product conforming to standards:** CE
- **Approvals:** VDE, UL, CSA, CCC, GOST are applied for

---

<table>
<thead>
<tr>
<th>Centrifugal fan</th>
<th>kg</th>
<th>Inlet nozzle with one pressure tap</th>
<th>Centrifugal module</th>
<th>kg</th>
<th>Centrifugal module w. support bracket</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 450-AY86 -01</td>
<td>16.4</td>
<td>45075-2-4013</td>
<td>K3G 450-AY86 -02</td>
<td>31.9</td>
<td>K3G 450-AY86 -32</td>
<td>31.9</td>
</tr>
</tbody>
</table>

\( \text{R3G 450-AY86 -01} \)

- **Cable gland**
  - M20x1.5 (3x): Cable diameter
  - min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm

- **Pressure tap**
- **Cable gland**
- **Guard grille**
- **Inlet nozzle**
- **Electr. connection**

---

- **Masse centrifugal fan**
- **Centrifugal module**
- **Centrifugal module w. support bracket**

---

- **Observe the correct mounting position!**
  - **Install the support struts only vertically as shown in the view!**

---

- **Cable gland**
- **Guard grille**
- **Inlet nozzle**
- **Electr. connection**

---

- **Depth of screw 12-16 mm**
- **Tightening torque 3.5 ± 0.5 Nm**

---

- **Centrifugal module with higher protection against corrosion**
EC centrifugal fan and modules
backward curved, Ø 450

- **Material:**
  - Support bracket: Steel, coated in black
  - Support plate: Sheet steel, hot-galvanised
  - Impeller: Sheet aluminium, welded
  - Rotor: Coated in black
  - Electronics enclosure: Die-cast aluminium

- **Number of blades:** 7
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** “F”
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

---

**Nominal data**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>*3G 450</td>
<td>M3G150-FF</td>
<td>≈ 3–380–480</td>
<td>50/60</td>
<td>2040</td>
<td>2730</td>
<td>4,20</td>
<td>≈ -25...+60</td>
<td>L5</td>
</tr>
</tbody>
</table>

(subject to alterations)

(1) Nominal data in operating point with maximum load and 400 VAC

---

Air performance measured as per: ISO 5801,
Installation category A,
with ebm-papst inlet nozzle
without protection against accidental contact

Suction-side noise levels:
$\text{L}_{WA}$ as per ISO 13347,
$L_{WA}$ measured at 1 m distance
to fan axis

The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.

With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 66 ff.
- **Technical features:**
  - PFC (passive)
  - Integrated PID controller
  - Control input 0-10 VDC or 4-20 mA
  - Input for sensor 0-10 V or 4-20 mA
- **EMC:** Interference emission acc. to EN 61000-6-3
  Interference immunity acc. to EN 61000-6-2
  Harmonics acc. to EN 61000-3-2/3
- **Leakage current:** < 3.5 mA acc. to EN 61000-3-1
- **Connection leads:** Via terminal strip
- **Protection class:** I (acc. to EN 61800-5-1)
- **Product conforming to standards:** CE
- **Approvals:** UL, CSA, GOST

---

<table>
<thead>
<tr>
<th>Centrifugal fan</th>
<th>kg</th>
<th>Inlet nozzle with one pressure tap</th>
<th>Centrifugal module w. support bracket</th>
<th>kg</th>
<th>Centrifugal module w. supp. bracket</th>
<th>kg</th>
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<tr>
<td>R3G 450-AQ24 -01</td>
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<td>K3G 450-AQ24 -01</td>
<td>38.2</td>
<td>K3G 450-AQ24 -31</td>
<td>38.2</td>
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</tbody>
</table>

(2) Centrifugal module with higher protection against corrosion

---

Observe the correct mounting position!
Install the support struts only vertically as shown in the view!
EC centrifugal fan and modules
backward curved, Ø 450

- **Material:**
  - Support bracket: Steel, coated in black
  - Support plate: Sheet steel, hot-galvanised
  - Impeller: Sheet aluminium, welded
  - Rotor: Coated in black
  - Electronics enclosure: Die-cast aluminium

- **Number of blades:** 7
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** "F"
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>rpm</th>
<th>W</th>
<th>A</th>
<th>°C</th>
<th>p. 64</th>
</tr>
</thead>
<tbody>
<tr>
<td>*3G 450</td>
<td>M3G150-IF</td>
<td>3~</td>
<td>380-480</td>
<td>50/60</td>
<td>2750</td>
<td>5370</td>
<td>8,30</td>
<td>-25..+40</td>
</tr>
</tbody>
</table>

(subject to alterations)

(1) Nominal data in operating point with maximum load and 400 VAC

### Curves

<table>
<thead>
<tr>
<th>Curve</th>
<th>n rpm</th>
<th>P_a W</th>
<th>I A</th>
<th>L_pA dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>2750</td>
<td>3105</td>
<td>4,79</td>
<td>100</td>
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<td></td>
<td>2750</td>
<td>4841</td>
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<td>90</td>
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<td>5370</td>
<td>8,30</td>
<td>89</td>
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<td>5060</td>
<td>7,80</td>
<td>93</td>
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<td></td>
<td>2280</td>
<td>1769</td>
<td>2,73</td>
<td>96</td>
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<td>2280</td>
<td>2759</td>
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<td>2280</td>
<td>2884</td>
<td>4,44</td>
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<td></td>
<td>1815</td>
<td>893</td>
<td>1,38</td>
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<td>1815</td>
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<td>2,15</td>
<td>81</td>
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<td></td>
<td>1815</td>
<td>1543</td>
<td>2,37</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>1815</td>
<td>1455</td>
<td>2,24</td>
<td>84</td>
</tr>
</tbody>
</table>

Air performance measured as per: ISO 5801,
Installation category A,
without protection against accidental contact
Suction-side noise levels L_pA measured at 1 m distance to fan axis

The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.

With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 66 ff.
- Technical features:
  - PFC (passive)
  - Integrated PID controller
  - Control input 0-10 VDC bzw. 4-20 mA
  - Input for sensor 0-10 V or 4-20 mA
- EMC: Interference emission acc. to EN 61000-6-3
  Interference immunity acc. to EN 61000-6-2
  Harmonics acc. to EN 61000-3-2/3
- Leakage current: < 5,5 mA acc. to EN 61800-5-1
- Connection leads: Via terminal strip
- Protection class: I (acc. to EN 61800-5-1)
- Product conforming to standards: CE
- Approvals: UL, CSA, GOST

---

### Table: Mass of centrifugal module

<table>
<thead>
<tr>
<th>Centrifugal fan</th>
<th>Inlet nozzle with one pressure tap</th>
<th>Centrifugal module w. support bracket</th>
<th>Mass of centrifugal module w. support bracket</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 450-AZ30 -01</td>
<td>31,1</td>
<td>45075-1-4013</td>
<td>52,7</td>
</tr>
<tr>
<td>K3G 450-AZ30 -01</td>
<td>52,7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>K3G 450-AZ30 -31</td>
<td>52,7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(2) Centrifugal module with higher protection against corrosion

---

![Diagram](image-url)

- Cable gland M20x1,5(2x)
- Cable gland M25x1,5(1x)
- Depth of screw max. 20 mm
- Tightening torque 3.5 ± 0.5 Nm
- Cable diameter min. 9 mm, max. 16 mm, tightening torque 6 ± 0.9 Nm
- Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm

---

 ebmpapst

Guard grille p. 69
Inlet nozzle p. 60
Electr. connection p. 64
EC centrifugal fan and modules
backward curved, Ø 500

- **Material:**
  - Support bracket: Steel, coated in black
  - Support plate: Sheet steel, hot-galvanised
  - Impeller: Sheet aluminium, welded
  - Rotor: Coated in black
  - Electronics enclosure: Die-cast aluminium

- **Number of blades:** 7
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** “F”
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>rpm</th>
<th>W</th>
<th>A</th>
<th>°C</th>
<th>p. 64</th>
</tr>
</thead>
<tbody>
<tr>
<td>*3G 500</td>
<td>M3G 150-FF</td>
<td>3~</td>
<td>380-480</td>
<td>50/60</td>
<td>1780</td>
<td>2825</td>
<td>4,30</td>
<td>-25..+60</td>
</tr>
</tbody>
</table>

(subject to alterations)

(1) Nominal data in operating point with maximum load and 400 VAC

### Curves

- Air performance measured as per: ISO 5801
- Installation category A
- With ebm-papst inlet nozzle
- Without protection against accidental contact
- Suction-side noise levels:
  - LWA as per ISO 13347
  - LWA measured at 1 m distance
  - to fan axis

The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.

With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 66 ff.
- Technical features:
  - PFC (passive)
  - Integrated PID controller
  - Control input 0-10 VDC or 4-20 mA
  - Input for sensor 0-10 V or 4-20 mA
- EMC: Interference emission acc. to EN 61000-6-3
  Interference immunity acc. to EN 61000-6-2
  Harmonics acc. to EN 61000-3-2/3
- Leakage current: < 5.5 mA acc. to EN 61800-5-1
- Connection leads: Via terminal strip
- Protection class: I (acc. to EN 61800-5-1)
- Product conforming to standards: CE
- Approvals: UL, CSA, GOST

---

### Technical Features

**Centrifugal Fan**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mass</td>
<td>24.6</td>
</tr>
<tr>
<td>Inlet nozzle with one pressure tap</td>
<td>64025-2-4013</td>
</tr>
</tbody>
</table>

**Centrifugal Module with Support Bracket**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mass</td>
<td>40.2</td>
</tr>
</tbody>
</table>

---

**Cable Gland M20x1.5 (3x):**

- Cable diameter min. 4 mm, max. 10 mm
- Tightening torque 4 ± 0.6 Nm

---

**Guard grille** p. 60

**Inlet nozzle** p. 60

**Electr. connection** p. 64
EC centrifugal fan and modules
backward curved, Ø 500

- **Material:**
  - Support bracket: Steel, coated in black
  - Support plate: Sheet steel, hot-galvanised
  - Impeller: Sheet aluminium, welded
  - Rotor: Coated in black
  - Electronics enclosure: Die-cast aluminium

- **Number of blades:** 7
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** "F"
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>rpm</th>
<th>W</th>
<th>A</th>
<th>°C</th>
<th>p. 64</th>
</tr>
</thead>
<tbody>
<tr>
<td>*3G 500</td>
<td>M3G 150-IF</td>
<td>3~ 380-480</td>
<td>50/60</td>
<td>2200</td>
<td>5500</td>
<td>8,40</td>
<td>-25..+45</td>
<td>L5</td>
</tr>
</tbody>
</table>

(subject to alterations)

(1) Nominal data in operating point with maximum load and 485 VAC

### Curves

<table>
<thead>
<tr>
<th>n rpm</th>
<th>Pₐ W</th>
<th>I A</th>
<th>Lₐ A dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2200</td>
<td>3725</td>
<td>5,82</td>
<td>100</td>
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<tr>
<td>2200</td>
<td>4944</td>
<td>7,64</td>
<td>94</td>
</tr>
<tr>
<td>2200</td>
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<td>8,40</td>
<td>89</td>
</tr>
<tr>
<td>2200</td>
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<td>95</td>
</tr>
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<td>1825</td>
<td>2736</td>
<td>4,23</td>
<td>90</td>
</tr>
<tr>
<td>1825</td>
<td>3052</td>
<td>4,70</td>
<td>84</td>
</tr>
<tr>
<td>1825</td>
<td>2830</td>
<td>4,37</td>
<td>86</td>
</tr>
<tr>
<td>1465</td>
<td>1055</td>
<td>1,65</td>
<td>91</td>
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<td>2,43</td>
<td>80</td>
</tr>
<tr>
<td>1465</td>
<td>1464</td>
<td>2,26</td>
<td>81</td>
</tr>
</tbody>
</table>

Air performance measured as per: ISO 5801,
Installation category A,
with ebm-papst inlet nozzle
without protection against accidental contact

Suction-side noise levels:
Lₐ A as per ISO 13347,
Lₐ A measured at 1 m distance to fan axis

The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.

With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 66 ff.
### Technical features:
- **PFC** (passive)
- Integrated PID controller
- Control input 0-10 VDC bzw. 4-20 mA
- Input for sensor 0-10 V or 4-20 mA
- **EMC:** Interference emission acc. to EN 61000-6-3
- Interference immunity acc. to EN 61000-6-2
- Harmonics acc. to EN 61000-3-2/3
- **Leakage current:** < 0,5 mA acc. to EN 61800-5-1
- **Connection leads:** Via terminal strip
- **Protection class:** I (acc. to EN 61800-5-1)
- **Product conforming to standards:** CE
- **Approvals:** UL, CSA, GOST

### Centrifugal fan

<table>
<thead>
<tr>
<th>Model</th>
<th>Mass</th>
<th>Inlet nozzle with one pressure tap</th>
<th>Centrifugal module w. support bracket</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 500-AQ33 -01</td>
<td>33,2</td>
<td>64025-2-4013</td>
<td>K3G 500-AQ33 -01</td>
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<tr>
<td>K3G 500-AQ33 -01</td>
<td>55,9</td>
<td></td>
<td>K3G 500-AQ33 -31</td>
</tr>
</tbody>
</table>

(2) Centrifugal module with higher protection against corrosion

### Diagrams

- **Cable diameter:** min. 9 mm, max. 16 mm, tightening torque $6 \pm 0.9$ Nm
- **Cable diameter:** min. 4 mm, max. 10 mm, tightening torque $4 \pm 0.6$ Nm

---

**Guard grille**
- Page 60

**Inlet nozzle**
- Page 60

**Electrical connection**
- Page 64
EC centrifugal fan and modules
backward curved, Ø 560

- **Material:** Support bracket: Steel, coated in black
  Support plate: Sheet steel, hot-galvanised
  Impeller: Sheet aluminium, welded
  Rotor: Coated in black
  Electronics enclosure: Die-cast aluminium
- **Number of blades:** 7
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** “F”
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>Curve</th>
<th>Nominal voltage range</th>
<th>Frequency</th>
<th>Speed/rpm(1)</th>
<th>Max. input power(1)</th>
<th>Max. current draw(1)</th>
<th>Perm. ambient temp.</th>
<th>Electr. connection</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>3G 560</em></td>
<td>M3G 150-IF</td>
<td>☯ 3~ 380-480 50/60</td>
<td>1500</td>
<td>3000</td>
<td>4,60</td>
<td>-25..+50</td>
<td>L5)subject to alterations</td>
<td>(1) Nominal data in operating point with maximum load and 400VAC</td>
<td></td>
</tr>
</tbody>
</table>

### Curves

<table>
<thead>
<tr>
<th>n rpm</th>
<th>P A</th>
<th>I A</th>
<th>LpA dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1500</td>
<td>1952</td>
<td>2.98</td>
<td>90</td>
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<tr>
<td>1500</td>
<td>2481</td>
<td>3.77</td>
<td>86</td>
</tr>
<tr>
<td>1500</td>
<td>3000</td>
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<td>1500</td>
<td>2754</td>
<td>4.18</td>
<td>83</td>
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<tr>
<td>1000</td>
<td>799</td>
<td>1.21</td>
<td>74</td>
</tr>
</tbody>
</table>

Air performance measured
as per: ISO 5801,
Installation category A,
with ebm-papst inlet nozzle
without protection against
accidental contact
Suction-side noise levels:
LpA as per ISO 13347,
LpA measured at 1 m distance
to fan axis
The acoustic values given are
only valid under the measure-
ment conditions listed and
may vary depending on the
installation situation.
With any deviation to the stan-
dard setup, the specific values
have to be checked and re-
viewed once installed or fitted!

For detailed information
see page 66 ff.
**Technical features:**
- PFC (passive)
- Integrated PID controller
- Control input 0-10 VDC or 4-20 mA
- Input for sensor 0-10 V or 4-20 mA
- **EMC:** Interference emission acc. to EN 61000-6-3
  Interference immunity acc. to EN 61000-6-2
  Harmonics acc. to EN 61000-3-2/3
- **Leakage current:** < 5.5 mA acc. to EN 61800-5-1
- **Connection leads:** Via terminal strip
- **Protection class:** I (acc. to EN 61800-5-1)
- **Product conforming to standards:** CE
- **Approvals:** UL, CSA, GOST

<table>
<thead>
<tr>
<th>Centrifugal fan</th>
<th>kg</th>
<th>Inlet nozzle with one pressure tap</th>
<th>Centrifugal module w. support bracket</th>
<th>kg</th>
<th>Centrifugal module w. supp. bracket</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 560-AP23 -01</td>
<td>30.5</td>
<td>64030-2-4013</td>
<td>K3G 560-AP23 -01</td>
<td>56.1</td>
<td>K3G 560-AP23 -31</td>
<td>56.1</td>
</tr>
</tbody>
</table>

(2) Centrifugal module with higher protection against corrosion

- Slave output 0-10 V max. 3 mA
- Output 20 VDC (±20 %) max. 50 mA
- Output 10 VDC (+10 %) max. 10 mA
- RS485 MODBUS
- Motor current limitation, Alarm relay
- Line undervoltage / phase failure detection
- Over-temperature protected electronics / motor
- Locked-rotor protection, Soft start
- Digital inputs for day/night switch, enabling, cooling / heating

---

**Cable gland M20x1.5 (3x):**
- Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm

**Guard grille p. 60**
**Inlet nozzle p. 60**
**Electr. connection p. 64**
EC centrifugal fan and modules
backward curved, Ø 560

- **Material:** Support bracket: Steel, coated in black
  Support plate: Sheet steel, hot-galvanised
  Impeller: Sheet aluminium, welded
  Rotor: Coated in black
  Electronics enclosure: Die-cast aluminium

- **Number of blades:** 7
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** “F”
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>Voltage range</th>
<th>Frequency</th>
<th>Speed</th>
<th>W</th>
<th>A</th>
<th>°C</th>
<th>p. 64</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>3G 560</em></td>
<td>M3G 150-NA</td>
<td>380-480 VAC</td>
<td>50/60</td>
<td>1750</td>
<td>4700</td>
<td>7.3</td>
<td>-25..+40</td>
<td>L5</td>
</tr>
</tbody>
</table>

(1) Nominal data in operating point with maximum load and 400 VAC

### Curves

- Air performance measured as per ISO 5801, installation category A, with ebm-papst inlet nozzle without protection against accidental contact
- Suction-side noise levels: $L_{WA}$ as per ISO 13347, $L_{WA}$ measured at 1 m distance to fan axis
- The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.

With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 66 ff.
- **Technical features:**
  - PFC (passive)
  - Integrated PID controller
  - Control input 0-10 VDC bzw. 4-20 mA
  - Input for sensor 0-10 V or 4-20 mA
  - **EMC:** Interference emission acc. to EN 61000-6-3
  - Interference immunity acc. to EN 61000-6-2
  - Harmonics acc. to EN 61000-3-2/3
  - **Leakage current:** < 5,5 mA acc. to EN 61800-5-1
  - **Connection leads:** Via terminal strip
  - **Protection class:** I (acc. to EN 61800-5-1)
  - **Product conforming to standards:** CE
  - **Approvals:** UL, CSA, GOST

<table>
<thead>
<tr>
<th>Centrifugal fan</th>
<th>kg</th>
<th>Inlet nozzle with one pressure tap</th>
<th>kg</th>
<th>Centrifugal module w. supp. bracket</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 560-A004 -01</td>
<td>40,0</td>
<td>64030-2-4013</td>
<td>69,7</td>
<td>K3G 560-A004 -01</td>
<td>69,7</td>
</tr>
<tr>
<td><strong>(2) Centrifugal module with higher protection against corrosion</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Cable gland M25x1,5(1x)**
- **Cable gland M25x1,5(2x)**
- **Cable diameter**
  - min. 9 mm, max. 16 mm, tightening torque $6 \pm 0.9$ Nm
  - min. 4 mm, max. 10 mm, tightening torque $4 \pm 0.6$ Nm
- **Pressure tap**
- **Guard grille**
  - p. 60
- **Inlet nozzle**
  - p. 60
- **Electr. connection**
  - p. 64
EC centrifugal fan and modules
backward curved, Ø 630

- **Material:** Support structure: Sheet steel, hot-galvanised
  Impeller: Sheet aluminium, welded
  Rotor: Coated in black
  Electronics enclosure: Die-cast aluminium

- **Number of blades:** 7

- **Direction of rotation:** Clockwise, seen on rotor

- **Type of protection:** IP 54 (acc. to EN 60529)

- **Insulation class:** “F”

- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request

- **Condensate discharges:** Rotor-side

- **Mode of operation:** Continuous operation (S1)

- **Bearings:** Maintenance-free ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>rpm</th>
<th>W</th>
<th>A</th>
<th>°C</th>
<th>p. 64</th>
</tr>
</thead>
<tbody>
<tr>
<td>*3G 630</td>
<td>M3G 200-HF</td>
<td>3– 380–480</td>
<td>50/60</td>
<td>1450</td>
<td>6140</td>
<td>9,90</td>
<td>-25..+40</td>
<td>L5)</td>
</tr>
</tbody>
</table>

(subject to alterations)

(1) Nominal data in operating point with maximum load and 485 VAC

### Curves

<table>
<thead>
<tr>
<th>rpm</th>
<th>P&lt;sub&gt;n&lt;/sub&gt; W</th>
<th>I A</th>
<th>L&lt;sub&gt;WA&lt;/sub&gt; dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1200</td>
<td>4114</td>
<td>6,75</td>
<td>95</td>
</tr>
<tr>
<td>1200</td>
<td>5426</td>
<td>8,70</td>
<td>88</td>
</tr>
<tr>
<td>1200</td>
<td>6140</td>
<td>9,90</td>
<td>84</td>
</tr>
<tr>
<td>1200</td>
<td>4956</td>
<td>7,95</td>
<td>87</td>
</tr>
<tr>
<td>1200</td>
<td>2314</td>
<td>3,79</td>
<td>90</td>
</tr>
<tr>
<td>1200</td>
<td>3050</td>
<td>4,89</td>
<td>84</td>
</tr>
<tr>
<td>1200</td>
<td>3450</td>
<td>5,54</td>
<td>80</td>
</tr>
<tr>
<td>1200</td>
<td>2792</td>
<td>4,48</td>
<td>83</td>
</tr>
<tr>
<td>960</td>
<td>1185</td>
<td>1,94</td>
<td>86</td>
</tr>
<tr>
<td>960</td>
<td>1562</td>
<td>2,50</td>
<td>79</td>
</tr>
<tr>
<td>960</td>
<td>1766</td>
<td>2,83</td>
<td>75</td>
</tr>
<tr>
<td>960</td>
<td>1429</td>
<td>2,29</td>
<td>78</td>
</tr>
</tbody>
</table>

Air performance measured as per ISO 5801,
Installation category A,
with ebm-papst inlet nozzle
without protection against accidental contact
Suction-side noise levels
L<sub>WA</sub> as per ISO 13347,
L<sub>WA</sub> measured at 1 m distance to fan axis
The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.

With any deviation from the standard setup, the specific values have to be checked and re-viewed once installed or fitted!

For detailed information see page 66 ff.
- **Technical features:**
  - PFC (passive)
  - Integrated PID controller
  - Control input 0-10 VDC bzw. 4-20 mA
  - Input for sensor 0-10 V or 4-20 mA
  - **EMC:** Interference emission acc. to EN 61000-6-3
    - Interference immunity acc. to EN 61000-6-2
  - Line undervoltage / phase failure detection
  - PFC (passive)
  - Output 20 VDC (±20 %) max. 50 mA
  - Output 10 VDC (+10 %) max. 10 mA
  - RS485 MODBUS
  - Motor current limitation, Alarm relay
  - Locked-rotor protection, Soft start
  - Control input 0-10 VDC bzw. 4-20 mA
  - RS485 MODBUS
  - Digital inputs for day/night switch, enabling, cooling / heating

- **Leakage current:** < 3,5 mA acc. to EN 61800-5-1
- **Connection leads:** Via terminal strip
- **Protection class:** I (acc. to EN 61800-5-1)
- **Product conforming to standards:** CE
- **Approvals:** UL, CSA, GOST applied for

<table>
<thead>
<tr>
<th>Centrifugal fan</th>
<th>kg</th>
<th>Inlet nozzle with one pressure tap</th>
<th>Centrifugal module with support structure</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 630-AQ01 -01</td>
<td>61,0</td>
<td>64040-2-4013</td>
<td>K3G 630-AQ01 -01</td>
<td>105,0</td>
</tr>
</tbody>
</table>

- **Cable gland M20x1,5(2x)
- **Cable gland M25x1,5(1x)
- **Depth of screw max. 20 mm
- **Tightening torque** 3.5 ± 0.5 Nm
- **Cable diameter** min. 9 mm, max. 16 mm, tightening torque 6 ± 0.9 Nm

**Observe the correct mounting position!**
**Install only as shown in the view!**
EC centrifugal fan and modules
backward curved, Ø 710

- **Material:** Support structure: Sheet steel, hot-galvanised
  Impeller: Sheet aluminium, welded
  Rotor: Coated in black
  Electronics enclosure: Die-cast aluminium

- **Number of blades:** 7

- **Direction of rotation:** Clockwise, seen on rotor

- **Type of protection:** IP 54 (acc. to EN 60529)

- **Insulation class:** “F”

- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request

- **Condensate discharges:** Rotor-side

- **Mode of operation:** Continuous operation (S1)

- **Bearings:** Maintenance-free ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>Curve</th>
<th>Nominal voltage range</th>
<th>Frequency</th>
<th>Speed</th>
<th>Max. input power</th>
<th>Max. current draw</th>
<th>Perm. amb. temp.</th>
<th>Electr. connection</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>3G 710</em></td>
<td>M3G 200-LA</td>
<td>3~</td>
<td>380-480</td>
<td>50/60</td>
<td>1200</td>
<td>6240</td>
<td>10,00</td>
<td>-25..+40</td>
<td>L5</td>
</tr>
</tbody>
</table>

*subject to alterations*

(1) Nominal data in operating point with maximum load and 400 VAC

### Curves

<table>
<thead>
<tr>
<th>Curves</th>
<th>( n ) rpm</th>
<th>( P_a ) W</th>
<th>( I ) A</th>
<th>( L_{WA} ) dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1200</td>
<td>4060</td>
<td>6,70</td>
<td>96</td>
</tr>
<tr>
<td></td>
<td>1200</td>
<td>5561</td>
<td>8,94</td>
<td>89</td>
</tr>
<tr>
<td></td>
<td>1200</td>
<td>6240</td>
<td>10,00</td>
<td>83</td>
</tr>
<tr>
<td></td>
<td>1200</td>
<td>4999</td>
<td>8,12</td>
<td>85</td>
</tr>
<tr>
<td></td>
<td>1000</td>
<td>2332</td>
<td>3,85</td>
<td>92</td>
</tr>
<tr>
<td></td>
<td>1000</td>
<td>3202</td>
<td>5,15</td>
<td>85</td>
</tr>
<tr>
<td></td>
<td>1000</td>
<td>3590</td>
<td>5,73</td>
<td>79</td>
</tr>
<tr>
<td></td>
<td>1000</td>
<td>2872</td>
<td>4,67</td>
<td>81</td>
</tr>
<tr>
<td></td>
<td>790</td>
<td>1150</td>
<td>1,90</td>
<td>87</td>
</tr>
<tr>
<td></td>
<td>790</td>
<td>1579</td>
<td>2,54</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>790</td>
<td>1770</td>
<td>2,83</td>
<td>74</td>
</tr>
<tr>
<td></td>
<td>790</td>
<td>1416</td>
<td>2,30</td>
<td>76</td>
</tr>
</tbody>
</table>

*Air performance measured as per ISO 5801, Installation category A, with ebm-papst inlet nozzle without protection against accidental contact*

*Suction-side noise levels: \( L_{WA} \) as per ISO 13347, \( L_{WA} \) measured at 1 m distance to fan axis*

*The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.*

*With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!*

*For detailed information see page 66 ff.*
- **Technical features:**
  - PFC (passive)
  - Integrated PID controller
  - Control input 0-10 VDC or 4-20 mA
  - Input for sensor 0-10 V or 4-20 mA
  - Slave output 0-10 V max. 3 mA
  - Output 20 VDC (±20 %) max. 50 mA
  - Output 10 VDC (+10 %) max. 10 mA
  - RS485 MODBUS
  - Motor current limitation, Alarm relay
  - Line undervoltage / phase failure detection
  - Over-temperature protected electronics / motor
  - Locked-rotor protection, Soft start
  - Digital inputs for day/night switch, enabling, cooling / heating

- **EMC:**
  - Interference emission acc. to EN 61000-6-3
  - Interference immunity acc. to EN 61000-6-2
  - Harmonics acc. to EN 61000-3-2/3

- **Leakage current:** < 5.5 mA acc. to EN 61800-5-1
- **Connection leads:** Via terminal strip
- **Protection class:** I (acc. to EN 61800-5-1)
- **Product conforming to standards:** CE
- **Approvals:** UL, CSA, GOST applied for

<table>
<thead>
<tr>
<th>Centrifugal fan</th>
<th>Inlet nozzle with one pressure tap</th>
<th>Centrifugal module with support structure</th>
<th>Mass of centrifugal module with support structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 710-A001-01</td>
<td>73.0 kg</td>
<td>K3G 710-A001-01</td>
<td>130.0 kg</td>
</tr>
</tbody>
</table>

- **Centrifugal fan**
- **Inlet nozzle with one pressure tap**
- **Centrifugal module with support structure**
- **Mass of centrifugal module with support structure**

- **Observe the correct mounting position!**
- **Install only as shown in the view!**

**Part numbers:**
- R3G 710-A001-01
- K3G 710-A001-01

**Dimensions:**
- Depth of screw max. 20 mm
- Tightening torque 3.5 ± 0.5 Nm
- Cable diameter min. 9 mm, max. 16 mm, tightening torque 6 ± 0.9 Nm
- Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm

**Cable gland:**
- M25x1.5 (1x)
- M20x1.5 (2x)
- Cable diameter min. 9 mm, max. 16 mm, tightening torque 6 ± 0.9 Nm
- Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm

**Observe the correct mounting position!**
**Install only as shown in the view!**

**Guard grille:** p. 60
**Inlet nozzle:** p. 60
**Electrical connection:** p. 64
EC centrifugal fan and modules
backward curved, Ø 800

- **Material:** Support structure: Sheet steel, hot-galvanised
  Impeller: Sheet aluminium, welded
  Rotor: Coated in black
  Electronics enclosure: Die-cast aluminium
- **Number of blades:** 7
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** “F”
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>Motor voltage range</th>
<th>Frequency</th>
<th>Speed (rpm)</th>
<th>Max. input power (W)</th>
<th>Max. current draw (A)</th>
<th>Perm. amb. temp. °C</th>
<th>Electr. connection</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>3G 800</em></td>
<td>M3G 200-QA</td>
<td>3~/380-480, 50/60</td>
<td>960</td>
<td>5800</td>
<td>9,40</td>
<td>-25...+40</td>
<td>L5</td>
<td></td>
</tr>
</tbody>
</table>

**Note:**
- Nominal data in operating point with maximum load and 400 VAC
- Subject to alterations

### Curves

- Air performance measured as per ISO 5194
- Installation category A
- with ebm-papst inlet nozzle
- without protection against accidental contact
- Suction-side noise levels
- $L_{WA}$ as per ISO 13347
- $L_{WA}$ measured at 1 m distance to fan axis
- The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.
- With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 66 ff.
- Technical features:
  - PFC (passive)
  - Integrated PID controller
  - Control input 0-10 VDC bzw. 4-20 mA
  - Input for sensor 0-10 V or 4-20 mA
  - Slave output 0-10 V max. 3 mA
  - Output 20 VDC (±20 %) max. 50 mA
  - Output 10 VDC (+10 %) max. 10 mA
  - RS485 MODBUS
  - Motor current limitation, Alarm relay
  - Line undervoltage / phase failure detection
  - Over-temperature protected electronics / motor
  - Locked-rotor protection, Soft start
  - Digital inputs for day/night switch, enabling, cooling / heating

- EMC:
  - Interference emission acc. to EN 61000-6-3
  - Interference immunity acc. to EN 61000-6-2
  - Harmonics acc. to EN 61000-3-2/3

- Leakage current: < 3.5 mA acc. to EN 61000-5-1

- Connection leads: Via terminal strip

- Protection class: I (acc. to EN 61800-5-1)

- Product conforming to standards: CE

- Approvals: UL, CSA, GOST applied for

<table>
<thead>
<tr>
<th>Centrifugal fan</th>
<th>Inlet nozzle with one pressure tap</th>
<th>Centrifugal module with support structure</th>
<th>Mass of centrifugal module with support construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 800-A003 -01</td>
<td>97.0 kg</td>
<td>80075-2-4013</td>
<td>K3G 800-A003 -01</td>
</tr>
</tbody>
</table>

Observe the correct mounting position!
Install only as shown in the view!
EC centrifugal fan and modules
backward curved, Ø 900

- **Material**: Support structure: Sheet steel, hot-galvanised
  Impeller: Sheet aluminium, welded
  Rotor: Coated in black
  Electronics enclosure: Die-cast aluminium

- **Number of blades**: 7

- **Direction of rotation**: Clockwise, seen on rotor

- **Type of protection**: IP 54 (acc. to EN 60529)

- **Insulation class**: “F”

- **Mounting position**: Shaft horizontal or rotor on bottom; rotor on top on request

- **Condensate discharges**: Rotor-side

- **Mode of operation**: Continuous operation (S1)

- **Bearings**: Maintenance-free ball bearings

---

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>Curve</th>
<th>Nom. voltage range</th>
<th>Frequency</th>
<th>Speed/rpm(1)</th>
<th>Max. input power(1)</th>
<th>Max. current draw(1)</th>
<th>Perm. amb. temp.</th>
<th>Electr. connection</th>
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</thead>
<tbody>
<tr>
<td>*3G 900</td>
<td>M3G 200-QA</td>
<td>☺</td>
<td>3~ 380-480 50/60</td>
<td>800</td>
<td>5950</td>
<td>9,50</td>
<td>-25..+40</td>
<td>L5</td>
<td>p. 64</td>
</tr>
</tbody>
</table>

subject to alterations

(1) Nominal data in operating point with maximum load and 400 VAC

---

### Curves

<table>
<thead>
<tr>
<th>rpm</th>
<th>( P_a ) W</th>
<th>I A</th>
<th>( L_{WA} ) dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>800</td>
<td>3732</td>
<td>6,14</td>
<td>91</td>
</tr>
<tr>
<td>800</td>
<td>5512</td>
<td>8,86</td>
<td>83</td>
</tr>
<tr>
<td>800</td>
<td>5950</td>
<td>9,50</td>
<td>78</td>
</tr>
<tr>
<td>800</td>
<td>4991</td>
<td>8,02</td>
<td>79</td>
</tr>
<tr>
<td>665</td>
<td>2129</td>
<td>3,50</td>
<td>87</td>
</tr>
<tr>
<td>665</td>
<td>3144</td>
<td>5,05</td>
<td>79</td>
</tr>
<tr>
<td>665</td>
<td>3397</td>
<td>5,42</td>
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<tr>
<td>665</td>
<td>2847</td>
<td>4,58</td>
<td>75</td>
</tr>
<tr>
<td>530</td>
<td>1078</td>
<td>1,77</td>
<td>82</td>
</tr>
<tr>
<td>530</td>
<td>1591</td>
<td>2,56</td>
<td>74</td>
</tr>
<tr>
<td>530</td>
<td>1720</td>
<td>2,74</td>
<td>69</td>
</tr>
<tr>
<td>530</td>
<td>1441</td>
<td>2,32</td>
<td>70</td>
</tr>
</tbody>
</table>

Air performance measured as per ISO 5801, Installation category A, with ebm-papst inlet nozzle without protection against accidental contact

Suction-side noise levels: \( L_{WA} \) measured per ISO 13347, \( L_{PA} \) measured at 1 m distance to fan axis

The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation.

With any deviation from the standard setup, the specific values have to be checked and reviewed once installed or fitted!

For detailed information see page 66 ff.
Technical features:
- PFC (passive)
- Integrated PID controller
- Control input 0-10 VDC bzw. 4-20 mA
- Input for sensor 0-10 V or 4-20 mA
- EMC: Interference emission acc. to EN 61000-6-3
  Interference immunity acc. to EN 61000-6-2
  Harmonics acc. to EN 61000-3-2/3
- Leakage current: < 5,5 mA acc. to EN 61800-5-1
- Connection leads: Via terminal strip
- Protection class: I (acc. to EN 61800-5-1)
- Product conforming to standards: CE
- Approvals: UL, CSA, GOST applied for

- Slave output 0-10 V max. 3 mA
- Output 20 VDC (±20 %) max. 50 mA
- Output 10 VDC (+10 %) max. 10 mA
- RS485 MODBUS
- Motor current limitation, Alarm relay
- Line undervoltage / phase failure detection
- Over-temperature protected electronics / motor
- Locked-rotor protection, Soft start
- Digital inputs for day/night switch, enabling, cooling / heating

---

**Technical Data**

<table>
<thead>
<tr>
<th>Centrifugal Fan</th>
<th>Inlet nozzle with one pressure tap</th>
<th>Centrifugal module with support structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3G 900-AQ01 -01</td>
<td>107,0 kg</td>
<td>K3G 900-AQ01 -01</td>
</tr>
<tr>
<td></td>
<td>90075-2-4013</td>
<td>194,0 kg</td>
</tr>
</tbody>
</table>

---

**Dimensions**

- Cable gland M20x1,5(2x)
- Cable gland M25x1,5(1x)

- Depth of screw max. 20 mm
- Tightening torque 3.5 ± 0.5 Nm
- Cable diameter min. 9 mm, max. 16 mm, tightening torque 6 ± 0.9 Nm
- Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm

---

Observe the correct mounting position! Install only as shown in the view!
Accessories

Inlet nozzles without measuring device for backward curved centrifugal fans

<table>
<thead>
<tr>
<th>Part no.</th>
<th>Size</th>
<th>Vers.</th>
<th>For dimensions, see</th>
</tr>
</thead>
<tbody>
<tr>
<td>25070-2-4013</td>
<td>250</td>
<td>1</td>
<td>page 11</td>
</tr>
<tr>
<td>28070-2-4013</td>
<td>280</td>
<td>1</td>
<td>page 15</td>
</tr>
<tr>
<td>31570-2-4013</td>
<td>310</td>
<td>1</td>
<td>page 21</td>
</tr>
<tr>
<td>35670-2-4013</td>
<td>355</td>
<td>1</td>
<td>page 29</td>
</tr>
<tr>
<td>40070-2-4013</td>
<td>400</td>
<td>2</td>
<td>page 35</td>
</tr>
<tr>
<td>45070-2-4013</td>
<td>450</td>
<td>2</td>
<td>page 39</td>
</tr>
<tr>
<td>63072-2-4013</td>
<td>500</td>
<td>2</td>
<td>page 45</td>
</tr>
<tr>
<td>63071-2-4013</td>
<td>560</td>
<td>2</td>
<td>page 49</td>
</tr>
<tr>
<td>63070-2-4013</td>
<td>630</td>
<td>2</td>
<td>page 53</td>
</tr>
<tr>
<td>71070-2-4013</td>
<td>710</td>
<td>2</td>
<td>page 55</td>
</tr>
<tr>
<td>80070-2-4013</td>
<td>800</td>
<td>2</td>
<td>page 57</td>
</tr>
<tr>
<td>90070-2-4013</td>
<td>900</td>
<td>2</td>
<td>page 59</td>
</tr>
</tbody>
</table>

subject to alterations

Air intake guard grilles for backward curved centrifugal fans (according to EN 294)

<table>
<thead>
<tr>
<th>Part no.</th>
<th>Size</th>
<th>Vers.</th>
<th>a</th>
<th>b</th>
<th>d</th>
<th>e</th>
<th>Strut pitch</th>
</tr>
</thead>
<tbody>
<tr>
<td>78129-2-4039</td>
<td>250</td>
<td>1</td>
<td>260</td>
<td>4,5</td>
<td>191</td>
<td>2,8</td>
<td>4 x 90°</td>
</tr>
<tr>
<td>78130-2-4039</td>
<td>280</td>
<td>1</td>
<td>280</td>
<td>4,5</td>
<td>229</td>
<td>2,8</td>
<td>4 x 90°</td>
</tr>
<tr>
<td>78131-2-4039</td>
<td>310</td>
<td>1</td>
<td>325</td>
<td>4,5</td>
<td>248</td>
<td>2,8</td>
<td>4 x 90°</td>
</tr>
<tr>
<td>78132-2-4039</td>
<td>355</td>
<td>1</td>
<td>345</td>
<td>4,5</td>
<td>305</td>
<td>2,8</td>
<td>4 x 90°</td>
</tr>
<tr>
<td>78133-2-4039</td>
<td>400</td>
<td>2</td>
<td>390</td>
<td>8,5</td>
<td>343</td>
<td>3,8</td>
<td>3 x 120°</td>
</tr>
<tr>
<td>78134-2-4039</td>
<td>450</td>
<td>2</td>
<td>430</td>
<td>8,5</td>
<td>381</td>
<td>3,8</td>
<td>3 x 120°</td>
</tr>
<tr>
<td>78139-2-4039</td>
<td>500</td>
<td>2</td>
<td>445</td>
<td>8,5</td>
<td>410</td>
<td>3,8</td>
<td>3 x 120°</td>
</tr>
<tr>
<td>78137-2-4039</td>
<td>560</td>
<td>2</td>
<td>490</td>
<td>8,5</td>
<td>430</td>
<td>3,8</td>
<td>3 x 120°</td>
</tr>
</tbody>
</table>

subject to alterations

- Material: galvanised sheet steel

- Material: sheet steel, plastic coated, silver-metallic gloss

- Material: sheet steel, plastic coated, silver-metallic gloss
Effects of installation space
When mounting our product in a rectangular box, air performance might be reduced.

\[ d_h = \frac{2 \times B \times H}{B + H} \]

- \( B \): Width of box
- \( H \): Height of box
- \( D \): Outer diameter of the fan

The differential pressure approach compares the static pressure before the inlet nozzle with the static pressure inside the inlet nozzle. Air flow can be calculated on the basis of the differential pressure (difference in pressure of the static pressures) in keeping with the following equation:

\[ q_v = k \cdot \sqrt{\Delta p} \]

- \( q_v \) in \([m^3/h]\) and \( \Delta p \) in \([Pa]\)

If constant air flow is to be controlled to, then the nozzle pressure has to be kept constant:

\[ \Delta p = q_v^2 : k^2 \]

\( k \) takes into account the specific nozzle characteristics. Differences in static pressure are measured in 1/4 measuring point(s) along the circumference of the inlet nozzle. Connection on the customer side is accomplished via a pre-mounted T tube connector. This tube connector is suited for pneumatic hoses with an internal diameter of 4 mm.

Inlet nozzles with measuring device to determine air flow for backward curved centrifugal fans

<table>
<thead>
<tr>
<th>Part no.</th>
<th>Part no.</th>
<th>Size</th>
<th>k-value</th>
<th>For dimensions, see</th>
</tr>
</thead>
<tbody>
<tr>
<td>25075-2-4013(1) / 25080-2-4013(2)</td>
<td>250</td>
<td>70</td>
<td>page 11</td>
<td></td>
</tr>
<tr>
<td>28075-2-4013(1) / 28080-2-4013(2)</td>
<td>280</td>
<td>93</td>
<td>page 15</td>
<td></td>
</tr>
<tr>
<td>31575-2-4013(1) / 31580-2-4013(2)</td>
<td>310</td>
<td>116</td>
<td>page 21</td>
<td></td>
</tr>
<tr>
<td>35675-2-4013(1) / 35680-2-4013(2)</td>
<td>355</td>
<td>148</td>
<td>page 29</td>
<td></td>
</tr>
<tr>
<td>40075-2-4013(1) / 40080-2-4013(2)</td>
<td>400</td>
<td>188</td>
<td>page 35</td>
<td></td>
</tr>
<tr>
<td>45075-2-4013(1) / 45080-2-4013(2)</td>
<td>450</td>
<td>240</td>
<td>page 39</td>
<td></td>
</tr>
<tr>
<td>64025-2-4013(2) / 64002-2-4013(2)</td>
<td>500</td>
<td>281</td>
<td>page 45</td>
<td></td>
</tr>
<tr>
<td>64030-2-4013(1) / 64001-2-4013(2)</td>
<td>560</td>
<td>348</td>
<td>page 49</td>
<td></td>
</tr>
<tr>
<td>64040-2-4013(1) / 64000-2-4013(2)</td>
<td>630</td>
<td>438</td>
<td>page 53</td>
<td></td>
</tr>
<tr>
<td>71075-2-4013(1) / 71080-2-4013(2)</td>
<td>710</td>
<td>545</td>
<td>page 55</td>
<td></td>
</tr>
<tr>
<td>80075-2-4013(1) / 80080-2-4013(2)</td>
<td>800</td>
<td>695</td>
<td>page 57</td>
<td></td>
</tr>
<tr>
<td>90075-2-4013(1) / 90080-2-4013(2)</td>
<td>900</td>
<td>900</td>
<td>page 59</td>
<td></td>
</tr>
</tbody>
</table>

- Subject to alterations
- (1) with one pressure tap
- (2) with piezometer ring (4 pressure taps connected by tubing)
Electrical connections EC

K1)

Notes on various control possibilities and their applications

Customer circuit

Connection

Fan

<table>
<thead>
<tr>
<th>Line</th>
<th>Connection</th>
<th>Colour</th>
<th>Assignment / function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>L</td>
<td>black</td>
<td>Mains 50/60 Hz, phase</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>blue</td>
<td>Mains 50/60 Hz, neutral</td>
</tr>
<tr>
<td></td>
<td>PE</td>
<td>green/yellow</td>
<td>Protective earth</td>
</tr>
<tr>
<td></td>
<td>NC</td>
<td>white1</td>
<td>Alarm relay, break for failure</td>
</tr>
<tr>
<td></td>
<td>COM</td>
<td>white2</td>
<td>Alarm relay, COMMON</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Line</th>
<th>Connection</th>
<th>Colour</th>
<th>Assignment / function</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>+10 V</td>
<td>red</td>
<td>Voltage output +10 V max. 1.1 mA</td>
</tr>
<tr>
<td></td>
<td>0-10 V / PWM</td>
<td>yellow</td>
<td>Control input (Impedance 100 kΩ)</td>
</tr>
<tr>
<td></td>
<td>GND</td>
<td>blue</td>
<td>GND</td>
</tr>
</tbody>
</table>

Line 1  Line 2
**L6)**

<table>
<thead>
<tr>
<th>Connector</th>
<th>Connection</th>
<th>Assignment / function</th>
</tr>
</thead>
<tbody>
<tr>
<td>PE</td>
<td>PE</td>
<td>Protective earth</td>
</tr>
<tr>
<td>KL1</td>
<td>L3</td>
<td>Mains; L3</td>
</tr>
<tr>
<td></td>
<td>L2</td>
<td>Mains; L2</td>
</tr>
<tr>
<td></td>
<td>L1</td>
<td>Mains; L1</td>
</tr>
<tr>
<td>KL2</td>
<td>NC</td>
<td>Alarm relay, break for failure</td>
</tr>
<tr>
<td></td>
<td>COM</td>
<td>Alarm relay, COMMON (2A, 250 VAC, AC1)</td>
</tr>
<tr>
<td></td>
<td>NO</td>
<td>Alarm relay, make for failure</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Connector</th>
<th>Connection</th>
<th>Assignment / function</th>
</tr>
</thead>
<tbody>
<tr>
<td>KL3</td>
<td>OUT</td>
<td>Master output 0-10 V max. 3 mA</td>
</tr>
<tr>
<td>GND</td>
<td></td>
<td>GND</td>
</tr>
<tr>
<td></td>
<td>0-10 V / PWM</td>
<td>Control / Actual value input (Impedance 100 kΩ)</td>
</tr>
<tr>
<td>+10 V</td>
<td></td>
<td>Supply for external potentiometer, 10 VDC (+10%) max. 10 mA</td>
</tr>
<tr>
<td>+20 V</td>
<td></td>
<td>Supply for external sensor, 20 VDC (±20%) max. 50 mA</td>
</tr>
<tr>
<td>4-20 mA</td>
<td></td>
<td>Control / Actual value input</td>
</tr>
<tr>
<td>0-10 V / PWM</td>
<td></td>
<td>Control / Actual value input</td>
</tr>
<tr>
<td>GND</td>
<td></td>
<td>GND</td>
</tr>
<tr>
<td>RSB</td>
<td></td>
<td>RS485 interface for MODBUS RTU; RS B</td>
</tr>
<tr>
<td>RSA</td>
<td></td>
<td>RS485 interface for MODBUS RTU; RS A</td>
</tr>
<tr>
<td>RSB</td>
<td></td>
<td>RS485 interface for MODBUS RTU; RS B</td>
</tr>
<tr>
<td>RSA</td>
<td></td>
<td>RS485 interface for MODBUS RTU; RS A</td>
</tr>
</tbody>
</table>

**L7)**

<table>
<thead>
<tr>
<th>Connector</th>
<th>Connection</th>
<th>Assignment / function</th>
</tr>
</thead>
<tbody>
<tr>
<td>PE</td>
<td>PE</td>
<td>Protective earth</td>
</tr>
<tr>
<td>KL1</td>
<td>N</td>
<td>Mains 50/60 Hz, neutral</td>
</tr>
<tr>
<td></td>
<td>L</td>
<td>Mains 50/60 Hz, phase</td>
</tr>
<tr>
<td>KL2</td>
<td>NC</td>
<td>Alarm relay, break for failure</td>
</tr>
<tr>
<td></td>
<td>COM</td>
<td>Alarm relay, COMMON (2A, 250 VAC, AC1)</td>
</tr>
<tr>
<td></td>
<td>NO</td>
<td>Alarm relay, make for failure</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Connector</th>
<th>Connection</th>
<th>Assignment / function</th>
</tr>
</thead>
<tbody>
<tr>
<td>KL3</td>
<td>OUT</td>
<td>Master output 0-10 V max. 3 mA</td>
</tr>
<tr>
<td>GND</td>
<td></td>
<td>GND</td>
</tr>
<tr>
<td></td>
<td>0-10 V / PWM</td>
<td>Control / Actual value input (Impedance 100 kΩ)</td>
</tr>
<tr>
<td>+10 V</td>
<td></td>
<td>Supply for external potentiometer, 10 VDC (+10%) max. 10 mA</td>
</tr>
<tr>
<td>+20 V</td>
<td></td>
<td>Supply for external sensor, 20 VDC (±20%) max. 50 mA</td>
</tr>
<tr>
<td>4-20 mA</td>
<td></td>
<td>Control / Actual value input</td>
</tr>
<tr>
<td>0-10 V / PWM</td>
<td></td>
<td>Control / Actual value input</td>
</tr>
<tr>
<td>GND</td>
<td></td>
<td>GND</td>
</tr>
<tr>
<td>RSB</td>
<td></td>
<td>RS485 interface for MODBUS RTU; RS B</td>
</tr>
<tr>
<td>RSA</td>
<td></td>
<td>RS485 interface for MODBUS RTU; RS A</td>
</tr>
<tr>
<td>RSB</td>
<td></td>
<td>RS485 interface for MODBUS RTU; RS B</td>
</tr>
<tr>
<td>RSA</td>
<td></td>
<td>RS485 interface for MODBUS RTU; RS A</td>
</tr>
</tbody>
</table>
Electrical connections EC

<table>
<thead>
<tr>
<th>Connector</th>
<th>Connection</th>
<th>Assignment / function</th>
</tr>
</thead>
<tbody>
<tr>
<td>KL1</td>
<td>L3</td>
<td>Mains; L3</td>
</tr>
<tr>
<td></td>
<td>L2</td>
<td>Mains; L2</td>
</tr>
<tr>
<td></td>
<td>L1</td>
<td>Mains; L1</td>
</tr>
<tr>
<td>PE</td>
<td>PE</td>
<td>Protective earth</td>
</tr>
<tr>
<td>KL2</td>
<td>NC</td>
<td>Alarm relay, break for failure</td>
</tr>
<tr>
<td></td>
<td>COM</td>
<td>Alarm relay, COMMON (2A, 250 VAC, AC1)</td>
</tr>
<tr>
<td></td>
<td>NO</td>
<td>Alarm relay, make for failure</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Connector</th>
<th>Connection</th>
<th>Assignment / function</th>
</tr>
</thead>
<tbody>
<tr>
<td>KL3</td>
<td>Din1</td>
<td>Digital input 1 (enabling / disabling of electronics)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Enabling: Pin open or applied voltage 5...50 VDC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Disabling: Bridge to GND or applied voltage &lt; 1 VDC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ain1 I: Analogue set value input, 4-20 mA (impedance 100 kΩ), only to be used as alternative to terminal Ain1 U</td>
</tr>
<tr>
<td></td>
<td></td>
<td>+10 V: Supply for external potentiometer, 10 VDC (±3 %) max. 10 mA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ain1 U: Analogue set value input, 0-10 V (impedance 100 kΩ), only to be used as alternative to terminal Ain1 I</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GND: GND</td>
</tr>
<tr>
<td></td>
<td></td>
<td>RSb: RS485 interface for MODBUS RTU; RS B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>RSA: RS485 interface for MODBUS RTU; RS A</td>
</tr>
<tr>
<td></td>
<td>Aout</td>
<td>Analogue output 0-10 V max. 5 mA, reading of current motor speed / current motor control factor</td>
</tr>
<tr>
<td></td>
<td>Ain2 I</td>
<td>Analog: actual value input, 4-20mA (impedance 100kΩ), only to be used as alternative to terminal Ain2 U</td>
</tr>
<tr>
<td></td>
<td>+20 V</td>
<td>Supply for external sensor, 20 VDC (+25 % / -10%) max. 40 mA</td>
</tr>
<tr>
<td></td>
<td>Ain2 U</td>
<td>Analog: actual value input, 0-10 V (impedance 100 kΩ), only to be used as alternative to terminal Ain2 I</td>
</tr>
<tr>
<td></td>
<td>GND</td>
<td>GND</td>
</tr>
<tr>
<td></td>
<td>Din3</td>
<td>Digital input 3 (switch Normal / Inverse), The preset effective direction of the integrated controller can be selected via BUS or via digital input Normal/Inverse.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Normal: Pin open or applied voltage 5...50 VDC Inverse: Bridge to GND or applied voltage &lt; 1 VDC</td>
</tr>
<tr>
<td></td>
<td>Din2</td>
<td>Digital input 2 (switch Day / Night), The preset set of parameters can be selected via BUS or via digital input Day/Night. Day: Pin open or applied voltage 5...50 VDC Night: Bridge to GND or applied voltage &lt; 1 VDC</td>
</tr>
<tr>
<td>Connector</td>
<td>Connection</td>
<td>Assignment / function</td>
</tr>
<tr>
<td>-----------</td>
<td>------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>KL1</td>
<td>N</td>
<td>Mains; neutral</td>
</tr>
<tr>
<td></td>
<td>L1</td>
<td>Mains; L1</td>
</tr>
<tr>
<td>PE</td>
<td>PE</td>
<td>Protective earth</td>
</tr>
<tr>
<td>KL2</td>
<td>NC</td>
<td>Alarm relay, break for failure</td>
</tr>
<tr>
<td></td>
<td>COM</td>
<td>Alarm relay, COMMON (2A, 250 VAC, AC1)</td>
</tr>
<tr>
<td></td>
<td>NO</td>
<td>Alarm relay, make for failure</td>
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<td>KL3</td>
<td>Din1</td>
<td>Digital input 1 (enabling / disabling of electronics), Enabling: Pin open or applied voltage 5...50 VDC</td>
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<tr>
<td></td>
<td></td>
<td>Disabling: Bridge to GND or applied voltage &lt; 1 VDC</td>
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<tr>
<td></td>
<td>Ain1 I</td>
<td>Analogue set value input, 4-20 mA (impedance 100 Ω), only to be used as alternative to terminal Ain1 U</td>
</tr>
<tr>
<td></td>
<td>+10 V</td>
<td>Supply for external potentiometer, 10 VDC (±3 %) max. 10 mA</td>
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<tr>
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<td>Ain1 U</td>
<td>Analogue set value input, 0-10 V (impedance 100 kΩ), only to be used as alternative to terminal Ain1 I</td>
</tr>
<tr>
<td></td>
<td>GND</td>
<td>GND</td>
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<tr>
<td></td>
<td>RS B</td>
<td>RS485 interface for MODBUS RTU; RS B</td>
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<tr>
<td></td>
<td>RS A</td>
<td>RS485 interface for MODBUS RTU; RS A</td>
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<td>Aout</td>
<td>Analogue output 0-10 V max. 5 mA, reading of current motor speed / current motor control factor</td>
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<tr>
<td></td>
<td>Ain2 I</td>
<td>Analog: actual value input, 4-20mA (impedance 100kΩ), only to be used as alternative to terminal Ain2 U</td>
</tr>
<tr>
<td></td>
<td>+20 V</td>
<td>Supply for external sensor, 20 VDC (+25 % / -10%) max. 40 mA</td>
</tr>
<tr>
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<td>Ain2 U</td>
<td>Analog: actual value input, 0-10 V (impedance 100 kΩ), only to be used as alternative to terminal Ain2 I</td>
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<tr>
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<td>GND</td>
<td>GND</td>
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<td>Din3</td>
<td>Digital input 3 (switch Normal / Inverse), The preset effective direction of the integrated controller can be selected via BUS or via digital input</td>
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<td>Normal/Inverse</td>
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<td>Normal: Pin open or applied voltage 5...50 VDC</td>
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<td></td>
<td>Inverse: Bridge to GND or applied voltage &lt; 1 VDC</td>
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<td>Din2</td>
<td>Digital input 2 (switch Day / Night), The preset set of parameters can be selected via BUS or via digital input Day/Night</td>
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<td>Day: Pin open or applied voltage 5...50 VDC</td>
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<tr>
<td></td>
<td></td>
<td>Night: Bridge to GND or applied voltage &lt; 1 VDC</td>
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</table>
Technical parameters & scope

High standards for all ebm-papst products
Here at ebm-papst, we constantly strive to further improve our products in order to be able to offer you the best possible product for your application. Careful monitoring of the market ensures that technical innovations are reflected in the improvements of our products.

Based on the technical parameters listed below and the ambience you want our product to operate in, we here at ebm-papst can always work out the best solution for your specific application.

General performance parameters
Any deviations from the technical data and parameters described here are listed on the product-specific data sheet.

Type of protection
The type of protection is specified in the product-specific data sheets.

Insulation class
The insulation class is specified in the product-specific data sheets.

Mounting position
The mounting position is specified in the product-specific data sheets.

Condensate discharge holes
Information on the condensate discharge holes is provided in the product-specific data sheets.

Mode of operation
The mode of operation is specified in the product-specific data sheets.

Protection class
The protection class is specified in the product-specific data sheets.

Service life
The service life of ebm-papst products depends on two major factors:
– The service life of the insulation system
– The service life of the bearing system

The service life of the insulation system mainly depends on voltage level, temperature and ambient conditions, such as humidity and condensation.
The service life of the bearing system depends mainly on the thermal load on the bearing.
The majority of our products use maintenance-free ball bearings for any mounting position possible. As an option, sleeve bearings can be used, which is indicated on the product-specific data sheet wherever applicable.
The service life L10 of the ball bearings can be taken as approx. 40,000 operating hours at an ambient temperature of 40 °C, yet this estimate can vary according to the actual ambient conditions.

We will gladly provide you with a lifetime calculation taking into account your specific operating conditions.

Motor protection / thermal protection
Information on motor protection and thermal protection is provided in the product-specific data sheets.

Depending on motor type and field of application, the following protective features are realised:
– Thermal overload protection (TOP), either in-circuit or external
– PTC with electronic diagnostics
– Impedance protection
– Thermal overload protection (TOP) with electronic diagnostics
– Current limitation via electronics

If an external TOP is connected, the customer has to make sure to connect a conventional trigger device for switching it off.
Products without fitted TOP and without protection against improper use, a motor protection complying with the valid standards has to be installed.
Legal and normative directives
The products described in this catalogue are designed, developed and produced in keeping with the standards in place for the relevant product and, if known, the conditions governing the relevant fields of application.

Standards
Information on standards is provided in the product-specific data sheets.

EMC
Information on EMC standards is provided in the product-specific data sheets. Complying with the EMC standards has to be established on the final appliance, as different mounting situations can result in changed EMC properties.

Leakage current
Information on the leakage current is provided in the product-specific data sheets. Measuring is according to IEC 60990.

Approvals
In case you require a specific approval for your ebm-papst product (VDE, UL, GOST, CCC, CSA, etc.) please let us know. Most of our products can be supplied with the relevant approval. Information on existing approvals is provided in the product-specific data sheets.

Mechanical strain / performance parameters
All ebm-papst products are subjected to comprehensive tests complying with the normative specifications. In addition to this, the tests also reflect the vast experience and expertise of ebm-papst.

Vibration test
Vibration tests are carried out in compliance with
- Vibration test in operation according to DIN IEC 68, parts 2-6
- Vibration test at standstill according to DIN IEC 68, parts 2-6

Shock load
Shock load tests are carried out in compliance with
- Shock load according to DIN IEC 68, parts 2-27

Balancing quality
Testing the balancing quality is carried out in compliance with
- Residual imbalance according to DIN ISO 1940
- Standard balancing quality level G 6.3
Should you require a higher balancing quality level for your specific application, please let us know and specify this when ordering your product.

Chemo-physical strain / performance parameters
Should you have questions about chemo-physical strain, please direct them to your ebm-papst contact.

Fields of application, industries and applications
Our products are used in various industries and applications:
- Ventilation, air-conditioning and refrigeration technology, clean room technology, automotive and rail technology, medical and laboratory technology, electronics, computer and office technology, telecommunications, household appliances, heating, machines and plants, drive engineering.
- Our products are not designed for use in the aviation and aerospace industry!

Air performance measurements
All air performance measurements are carried out on suction side and on chamber test beds conforming to the specifications as per ISO 5801 and DIN 24163. The fans under test are installed in the measuring chamber at free air intake and exhaust (installation category A) and are operated at nominal voltage, with AC also at nominal frequency, and without any additional components such as guard grilles.
- As required by the standard, the air performance curves correspond to an air density of 1.2 kg/m³.
Measurement conditions for air and noise measurement

ebm-papst products are measured under the following conditions:

- Axial and diagonal fans in direction of rotation “V” in full nozzle and without guard grille
- Backward curved centrifugal fans, free-running and with inlet nozzle
- Forward curved single and dual inlet centrifugal fans with housing

Noise measurements

All noise measurements are carried out in low-reflective test rooms with reverberant floor. Thus the ebm-papst acoustic test chambers meet the requirements of precision class 1 according to DIN EN ISO 3745. For noise measurement, the fans being tested are placed in a reverberant wall and operated at nominal voltage (for AC, also at nominal frequency) without additional attachments such as the guard grille.

Sound pressure level and sound level

All acoustic values are established according to ISO 13347, DIN 45635 and ISO 3744/3745 to accuracy class 2 and given in A-rated form. When the sound pressure level ($L_p$) is measured, the microphone is on the intake side of the fan being tested, usually at a distance of 1 m on the fan axis.

To measure the sound power level ($L_w$), 10 microphones are distributed over an enveloping surface on the intake side of the fan being tested (see graphic). The sound power level measured can be roughly calculated from the sound pressure level by adding 7 dB.

Measuring configuration as per ISO 13347-3 respectively DIN 45635-38:

- 10 measuring points
- $d \geq D$
- $h = 1.5d \ldots 4.5d$
- Measurement area $S = 6d^2 + 7d(h + 1.5d)$
Adding multiple noise sources with the same level
Adding 2 noise sources with the same volume results in a level increase of approx. 3 dB.
The noise characteristics of multiple identical fans can be determined in advance based on
the noise values specified in the data sheet. This is shown in the diagram opposite.
Example: 8 A3G800 axial fans are on a condenser. According to the data sheet, the sound
pressure level of a fan is approximately 75 dB(A). The level increase measured from the dia-
gram is 9 dB. Thus the overall sound level of the installation can be expected to be 84 dB(A).

Adding two noise sources with different levels
The acoustic performance of two different fans can be predetermined based on the sound
levels given in the data sheet. This is shown in the diagram opposite.
Example: There is an axial fan A3G800 with a sound pressure level of 75 dB(A) at the oper-
ating point and an axial fan A3G710 with 71 dB(A) in a ventilation unit. The level difference is
4 dB. The level increase can now be read in the diagram as approx. 1.5 dB. This means that
the overall sound level of the unit can be expected to be 76.3 dB(A).

Distance laws
Sound power level is independent of distance to the sound source. In contrast to this, sound
pressure level decreases the further away the noise source is. The adjacent diagram shows
the decrease in level under far sound field conditions. Far sound field conditions apply when-
ever the distance between microphone and fan is big when compared to fan diameter and
wavelength to be considered. For more information on far sound field, please consult the rele-
vant literature on this complex topic. Per doubling of distance, the level in the far sound field
decreases by 6 dB. In the near field of the fan, other correlations apply and the decrease in
levels can be considerably smaller. The following example only applies to far sound field
conditions and can vary strongly depending on the installation effects:
With an axial fan A3G300, a sound pressure level of 65 dB(A) was measured at a distance of
1 m. According to the adjacent diagram, at a distance of 20 m we would get a reduction by
26 dB, i.e. a sound pressure level of 39 dB(A).
ebm-papst in Germany

Germany

ebm-papst
Mulfingen GmbH & Co. KG
Bachmühle 2
D-74673 Mulfingen
Phone +49 7938 81-0
Fax +49 7938 81-110
info1@de.ebmpapst.com
www.ebmpapst.com

ebm-papst
St. Georgen GmbH & Co. KG
Herrmann-Papst-Straße 1
D-78112 St. Georgen
Phone +49 7724 81-0
Fax +49 7724 81-1309
info2@de.ebmpapst.com
www.ebmpapst.com

ebm-papst
Landshut GmbH
Hofmark-Aich-Straße 25
D-84630 Landshut
Phone +49 871 707-0
Fax +49 871 707-465
info3@de.ebmpapst.com
www.ebmpapst.com

North

Berlin
Dipl.-Ing. (TH) Jens Duchow
Händelstraße 7
D-16341 Panketal
Phone +49 30 944149-62
Fax +49 30 944149-63
Jens.Duchow@de.ebmpapst.com

Bielefeld
Dipl.-Ing. (FH) Wolf-Jürgen Weber
Niehausweg 13
D-33739 Bielefeld
Phone +49 5206 91732-31
Fax +49 5206 91732-35
Wolf-Juergen.Weber@de.ebmpapst.com

Bielefeld
Dipl.-Ing. (FH) Wolf-Jürgen Weber
Niehausweg 13
D-33739 Bielefeld
Phone +49 5206 91732-31
Fax +49 5206 91732-35
Wolf-Juergen.Weber@de.ebmpapst.com

Dortmund
Dipl.-Ing. (FH) Hans-Joachim Pundt
Auf den Steinen 3
D-59519 Münheesee-Völlingenhaus
Phone +49 2925 800-407
Fax +49 2925 800-408
Hans-Joachim.Pundt@de.ebmpapst.com

Frankfurt
Dipl.-Ing. Christian Kleffmann
Dr.-Hermann-Krause-Straße 23
D-63454 Hanau
Phone +49 6181 1898-12
Fax +49 6181 1898-13
Christian.Kleffmann@de.ebmpapst.com

Halle
Dipl.-Ing. (TU) Michael Hannig
Lerchenheuck 4
D-06198 Salzatal / OT Lieskau
Phone +49 345 55124-56
Fax +49 345 55124-57
Michael.Hannig@de.ebmpapst.com

Halle
Dipl.-Ing. (TU) Michael Hannig
Lerchenheuck 4
D-06198 Salzatal / OT Lieskau
Phone +49 345 55124-56
Fax +49 345 55124-57
Michael.Hannig@de.ebmpapst.com

Hamburg
Ingenieurbüro Breuell GmbH
Ing. Dirk Kahl
Elektroingenieur
Grützmühlenweg 40
D-22339 Hamburg
Phone +49 40 538092-19
Fax +49 40 538092-84
Dirk.Kahl@de.ebmpapst.com

Hamburg
Ingenieurbüro Breuell GmbH
Ing. Dirk Kahl
Elektroingenieur
Grützmühlenweg 40
D-22339 Hamburg
Phone +49 40 538092-19
Fax +49 40 538092-84
Dirk.Kahl@de.ebmpapst.com

Heilbronn / Heidelberg
Dipl.-Ing. Mark Gartner
Gehweg 12
D-74199 Unterheinriet
Phone +49 7130 404569-1
Fax +49 7130 404569-2
Mark.Gartner@de.ebmpapst.com

Kassel
Dipl.-Ing. (FH) Ralph Brück
Hoherranstraße 3 b
D-35075 Gladchenhahn
Phone +49 6462 4071-10
Fax +49 6462 4071-11
Ralph.Brueck@de.ebmpapst.com

Koblenz
Winfried Schafer
Hinter der Kirch 10
D-56767 Uersfeld
Phone +49 2657 16-96
Fax +49 2657 16-76
Winfried.Schafer@de.ebmpapst.com

Koblenz
Winfried Schafer
Hinter der Kirch 10
D-56767 Uersfeld
Phone +49 2657 16-96
Fax +49 2657 16-76
Winfried.Schafer@de.ebmpapst.com

Munich
Dipl.-Wirt.-Ing. (FH) Jens Peter
Uhlandstraße 6
D-74427 Fichtenberg
Phone +49 7971 260-180
Fax +49 7971 260-221
Jens.Peter@de.ebmpapst.com

Nuremberg
Dipl.-Wirt.-Ing. (FH) Axel Resch
Steinfeldstraße 80
D-74626 Bretzfeld
Phone +49 7946 94401-02
Fax +49 7946 94401-03
Axel.Resch@de.ebmpapst.com

Offenbach
Dipl.-Ing. (FH) Ralf Braun
Hubeneweg 21
D-77704 Überkirch
Phone +49 7802 9822-52
Fax +49 7802 9822-53
Ralf.Braun@de.ebmpapst.com

Stuttgart
Dipl.-Ing. (FH) Rudi Weinmann
Hindenburgerstraße 100/1
D-73207 Plochingen
Phone +49 7153 9289-80
Fax +49 7153 9289-81
Rudi.Weinmann@de.ebmpapst.com

Ulm
M.Sc. Reinhard Sommerreißer
Am Silbermannpark 10
D-86161 Augsburg
Phone +49 821 6610-7023
Fax +49 821 6610-7024
Reinhard.Sommerreisser@de.ebmpapst.com

Distributors

Frankfurt
R.E.D. Handelsgesellschaft mbH
Gutenbergstraße 3
D-63110 Rodgau - Jügesheim
Phone +49 6106 841-0
Fax +49 6106 841-11
info@red-elektromechanik.de
www.red-elektromechanik.de

Hamburg
Breuell + Hilgenfeldt GmbH
Grützmühlenweg 40
D-22339 Hamburg
Phone +49 40 538092-20
Fax +49 40 538092-84
info@breuell-hilgenfeldt.de

Munich
A. Schweiger GmbH
Ohmstraße 1
D-82054 Sauerlach
Phone +49 8104 897-0
Fax +49 8104 897-90
info@schweiger-gmbh.de
www.schweiger-gmbh.com

Express Service-Center (1 to 5 pieces)

North
Breuell + Hilgenfeldt GmbH
Grützmühlenweg 40
D-22339 Hamburg
Phone +49 40 538092-20
Fax +49 40 538092-84
ebmpapst@breuelli-hilgenfeldt.de

South
HDS Ventilatoren Vertriebs GmbH
Glaswiesenstraße 1
D-74677 Dörzbach
Phone +49 7937 8033520
Fax +49 7937 8033525
info@hds-gmbh.net
# ebm-papst in Europe

<table>
<thead>
<tr>
<th>Country</th>
<th>Address</th>
<th>Phone Numbers</th>
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<tbody>
<tr>
<td>Austria</td>
<td>ebm-papst Motoren &amp; Ventilatoren GmbH</td>
<td>+43 732 321150-0, +43 732 321150-20</td>
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<td>Cyprus</td>
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<tr>
<td>Denmark</td>
<td>ebm-papst Denmark ApS</td>
<td>+45 43 631111, +45 43 630505</td>
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<td>Estonia</td>
<td>ebm-papst Oy, Eesti Filial</td>
<td>+372 887022-0, +372 887022-13</td>
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<tr>
<td>Finland</td>
<td>ebm-papst Oy</td>
<td>+358 9 887022-0</td>
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<tr>
<td>France</td>
<td>ebm-papst Sarl</td>
<td>+33 820 328266</td>
</tr>
<tr>
<td>Greece</td>
<td>Helcoma</td>
<td>+30 210 9513-705, +30 210 9513-490</td>
</tr>
<tr>
<td>Hungary</td>
<td>ebm-papst Industries Kft.</td>
<td>+36 1 8722-190</td>
</tr>
<tr>
<td>Iceland</td>
<td>RJ Engineers</td>
<td>+354 567 8030, +354 567 8015</td>
</tr>
<tr>
<td>Ireland</td>
<td>ebm-papst UK Ltd.</td>
<td>+44 1245 468555, +44 1245 468336</td>
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<td>Macedonia</td>
<td>ebm-papst Industries Kft.</td>
<td>+36 1 8722-194</td>
</tr>
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Note: The above information includes contact details for various countries within Europe, with specific addresses, phone numbers, and email IDs.
ebm-papst in Europe

Europe

Netherlands
ebm-papst Benelux B.V.
Engelsweeg 127
NL-5705 AC Helmond
Phone +31 492 502-900
Fax +31 492 502-950
verkoop.nl@ebmpapst.com
www.ebmpapst.nl

Norway
ebm-papst AS
P.B. 173 Holmiia
N-1203 Oslo
Phone +47 22 619173
Fax +47 22 619173
mailbox@ebmpapst.no
www.ebmpapst.no

Poland
ebm-papst Polska Sp. z o.o.
ul. Annopol 4A
PL-03236 Warszawa
Phone +48 22 6757819
Fax +48 22 6757819
office@ebmpapst.pl
www.ebmpapst.pl

Portugal
ebm-papst (Portugal), Lda.
Centro Empresarial de Alverca
Rua de Adarne, Vale D’Ervas
Corpo D / Fração 3
P-2615-178 Alverca do Ribatejo
Phone +351 218 394 880
Fax +351 218 394 759
info@pt.ebmpapst.com
www.ebmpapst.pt

Romania
ebm-papst Romania S.R.L.
Str. Tarnavel Nr. 20
RO-500327 Brașov
Phone +40 268 312-805
Fax +40 268 312-805
dudasludovic@xnet.ro

Russia
ebm-papst Urals GmbH
Posadskaja-Strasse, 239, 3
RU-620102 Ekaterinburg
Phone +7 343 2338000
Fax +7 343 2337788
Konstantin.Molokov@ru.ebmpapst.com
www.ebmpapst.ru

Switzerland
ebm-papst AG
Rütisbergstrasse 1
CH-8156 Oberhasli
Phone +41 44 73220-70
Fax +41 44 73220-77
verkauf@ebmpapst.ch
www.ebmpapst.ch

Turkey
Atatürk Organize Sanayi Bölgesi 10007 SK. No.:6
TR-35620 Çigli-Izmir
Phone +90 232 3282090
Fax +90 232 3280270
akantel@akantel.com.tr
www.ebmpapst.com.tr

Ukraine
ebm-papst Ukraine LLC
Lapse Boulevard, 4, Building 47
UA-03067 Kiev
Phone +38 044 2063091
Fax +38 044 2063091
mail@ebmpapst.ua
www.ebmpapst.ua

United Kingdom
ebm-papst UK Ltd.
Chelmsford Business Park
GB-Chelmsford Essex CM2 5EZ
Phone +44 1625 468555
Fax +44 1625 466336
sales@uk.ebmpapst.com
www.ebmpapst.co.uk

ebm-papst Automotive & Drives (UK) Ltd.
The Smithy
Fidlers Lane
GB-East Ilsley, Berkshire RG20 7LG
Phone +44 1635 2811-11
Fax +44 1635 2811-61
A&Dsales@uk.ebmpapst.com
www.ebmpapst-ad.com

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ebm-papst in America and Africa

**America**

- **Argentina**
  - ebm-papst de Argentina S.A.
  - Hernandarias 148 Lomas del Mirador
  - Pcia. de Buenos Aires (1752)
  - Phone: +54 11 46576135
  - Fax: +54 11 46572092
  - ventas@ar.ebmpapst.com
  - www.ebmpapst.com.ar

- **Brasil**
  - ebm-papst Motores Ventiladores Ltda.
  - Av. José Giorgi, 301 Galpões B6+B7
  - Condomínio Logical Center
  - BR-06707-100 Cotia - São Paulo
  - Phone: +55 11 4613-8700
  - Fax: +55 11 3164-8924
  - vendas@br.ebmpapst.com
  - www.ebmpapst.com.br

- **Canada**
  - ebm-papst Canada Inc.
  - 1800 Ironstone Manor, Unit 2
  - CDN-Pickering, Ontario, L1W3J9
  - Phone: +1 905 420-3533
  - Fax: +1 905 420-3772
  - sales@ca.ebmpapst.com
  - www.ebmpapst.com.ca

- **Mexico**
  - ebm Industrial S.de R.L. de C.V.
  - Paseo de Tamarindos 400-A-5th Piso
  - Col. Bosques de las Lomas
  - MEX-Mexico 05120, D.F.
  - Phone: +52 55 3300-5144
  - Fax: +52 55 3300-5243
  - sales@mx.ebmpapst.com
  - www.ebmpapst.com.mx

- **USA**
  - ebm-papst Inc.
    - P.O. Box 4009
    - 100 Hyde Road
    - USA-Farmington, CT 06034
    - Phone: +1 860 674-1515
    - Fax: +1 860 674-8536
    - sales@us.ebmpapst.com
    - www.ebmpapst.com

- **Mexico**
  - ebm-papst Automotive & Drives, Inc.
    - 3200 Greenfield, Suite 255
    - USA-Dearborn, MI 48120
    - Phone: +1 313 406-8080
    - Fax: +1 313 406-8081
    - automotive@us.ebmpapst.com
    - www.ebmpapst-automotive.us

**Africa**

- **South Africa**
  - ebm-papst South Africa (Pty) Ltd.
    - P.O. Box 3124
    - 1119 Yacht Avenue
    - ZA-2040 Honeydew
    - Phone: +27 11 794-3434
    - Fax: +27 11 794-5020
    - info@za.ebmpapst.com
    - www.ebmpapst.co.za
# ebm-papst in Asia and Australia

<table>
<thead>
<tr>
<th>Country</th>
<th>Location</th>
<th>Phone</th>
<th>Fax</th>
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<tr>
<td><strong>Asia</strong></td>
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<tr>
<td>China</td>
<td>ebm-papst Ventilator (Shanghai) Co., Ltd. No. 418, Huajing Road WaiGaoQiao Free Trade Zone No. 2001, Yang Gao (M) Road VRC-200131 Shanghai, P.R. of China Phone +86 21 5046-0183 Fax +86 21 5046-1119 <a href="mailto:sales@cn.ebmpapst.com">sales@cn.ebmpapst.com</a> <a href="http://www.ebmpapst.com.cn">www.ebmpapst.com.cn</a></td>
<td>+86 21 5046-0183</td>
<td>+86 21 5046-1119</td>
<td><a href="mailto:sales@cn.ebmpapst.com">sales@cn.ebmpapst.com</a> <a href="http://www.ebmpapst.com.cn">www.ebmpapst.com.cn</a></td>
</tr>
<tr>
<td>Hong Kong</td>
<td>ebm-papst Hong Kong Ltd. Unit No. 13.9 / F Technology Park, 18 On Lai Street Siu Lek Yuen, Sha Tin N.T. Hong Kong - P.R. of China Phone +852 2145-8678 Fax +852 2145-7678 <a href="mailto:info@hk.ebmpapst.com">info@hk.ebmpapst.com</a></td>
<td>+852 2145-8678</td>
<td>+852 2145-7678</td>
<td><a href="mailto:info@hk.ebmpapst.com">info@hk.ebmpapst.com</a></td>
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<tr>
<td>India</td>
<td>ebm-papst India Pvt. Ltd. 26/3, G.N.T. Road, Erukkencherry IND-Chennai-600118 Phone +91 44 25327556 Fax +91 44 25371149 <a href="mailto:sales@in.ebmpapst.com">sales@in.ebmpapst.com</a> <a href="http://www.ebmpapst.in">www.ebmpapst.in</a></td>
<td>+91 44 25327556</td>
<td>+91 44 25371149</td>
<td><a href="mailto:sales@in.ebmpapst.com">sales@in.ebmpapst.com</a> <a href="http://www.ebmpapst.in">www.ebmpapst.in</a></td>
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<tr>
<td>Indonesia</td>
<td>ebm-papst Indonesia Representative Office German Centre, 4th Floor, Suite 4470 Jl. Kapt. Subijono Dj. Bumi Serpong Damai RI-15321 Tangerang Phone +62 21 5376250 Fax +62 21 5388305 <a href="mailto:salesdept@id.ebmpapst.com">salesdept@id.ebmpapst.com</a></td>
<td>+62 21 5376250</td>
<td>+62 21 5388305</td>
<td><a href="mailto:salesdept@id.ebmpapst.com">salesdept@id.ebmpapst.com</a></td>
</tr>
<tr>
<td>Israel</td>
<td>Polak Bros. Import Agencies Ltd. 9 Hamefasim Street IL-Kiryat Atar, Petach-Tikva 49514 Phone +972 3 9100300 Fax +972 3 5796679 <a href="mailto:polak@polak.co.il">polak@polak.co.il</a> <a href="http://www.polak.co.il">www.polak.co.il</a></td>
<td>+972 3 9100300</td>
<td>+972 3 5796679</td>
<td><a href="mailto:polak@polak.co.il">polak@polak.co.il</a> <a href="http://www.polak.co.il">www.polak.co.il</a></td>
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<td><strong>Japan</strong></td>
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<td>ebm-papst Industries Japan K.K. 12 Floor, Benex S-3 Bldg. 3-20-8 Shinyokohama, Kohoku-ku J-222-033 Yokohama Phone +81 45 47057-51 Fax +81 45 47057-52 <a href="mailto:info@jp.ebmpapst.com">info@jp.ebmpapst.com</a> <a href="http://www.ebmpapst.jp">www.ebmpapst.jp</a></td>
<td>+81 45 47057-51</td>
<td>+81 45 47057-52</td>
<td><a href="mailto:info@jp.ebmpapst.com">info@jp.ebmpapst.com</a> <a href="http://www.ebmpapst.jp">www.ebmpapst.jp</a></td>
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<tr>
<td>Korea</td>
<td>ebm-papst Korea Co. Ltd. 6F, Trucet Bldg. B 8-2, Digital Media City (DMC) Sangam-Dong, Mapo-Gu ROK-Seoul 121-270 Phone +82 2 366213-24 Fax +82 2 366213-26 <a href="mailto:info@kr.ebmpapst.com">info@kr.ebmpapst.com</a> <a href="http://www.ebmpapst.co.kr">www.ebmpapst.co.kr</a></td>
<td>+82 2 366213-24</td>
<td>+82 2 366213-26</td>
<td><a href="mailto:info@kr.ebmpapst.com">info@kr.ebmpapst.com</a> <a href="http://www.ebmpapst.co.kr">www.ebmpapst.co.kr</a></td>
</tr>
<tr>
<td>Malaysia</td>
<td>ebm-papst Malaysia Representative Office Unit 12-2, Jalan USJ Sentral 3 Permasian Subang, Selangor Darul Ehsan MAL-47600 Subang Jaya Phone +60 3 8024-1680 Fax +60 3 8024-8718 <a href="mailto:salesdept@my.ebmpapst.com">salesdept@my.ebmpapst.com</a></td>
<td>+60 3 8024-1680</td>
<td>+60 3 8024-8718</td>
<td><a href="mailto:salesdept@my.ebmpapst.com">salesdept@my.ebmpapst.com</a></td>
</tr>
<tr>
<td>Singapore</td>
<td>ebm-papst SEA Pte. Ltd. No. 23 Ubi Road 4 #06-00 Olympia Industrial Building SGP-Singapore 408620 Phone +65 65513789 Fax +65 68428439 <a href="mailto:salesdept@sg.ebmpapst.com">salesdept@sg.ebmpapst.com</a></td>
<td>+65 65513789</td>
<td>+65 68428439</td>
<td><a href="mailto:salesdept@sg.ebmpapst.com">salesdept@sg.ebmpapst.com</a></td>
</tr>
<tr>
<td>Taiwan</td>
<td>ETECO Engineering &amp; Trading Corp. 10F-I, No. 92, Teh-Wei Str. RC-Tswon-Inn District, Kaohsiung Phone +886 7 557-4268 Fax +886 7 557-2768 <a href="mailto:eteco@ms22.hinet.net">eteco@ms22.hinet.net</a> <a href="http://www.ebmpapst.com.tw">www.ebmpapst.com.tw</a></td>
<td>+886 7 557-4268</td>
<td>+886 7 557-2768</td>
<td><a href="mailto:eteco@ms22.hinet.net">eteco@ms22.hinet.net</a> <a href="http://www.ebmpapst.com.tw">www.ebmpapst.com.tw</a></td>
</tr>
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**Thailand**

ebm-papst Thailand Co., Ltd. 99/349 Na-Nakorn Bldg., 4th Floor Chaeng Wattana Road, Thungsonghong, THA-10210 Laksi, BKK Phone +66 2 57615-24 Fax +66 2 57615-42 salesdept@th.ebmpapst.com www.ebmpapst.com | +66 2 57615-24 | +66 2 57615-42 | salesdept@th.ebmpapst.com www.ebmpapst.com |

**United Arab Emirates**

ebm-papst Middle East FZE PO Box 17755 Jebel Ali Free Zone / FZS1 / AP05 UAE-Dubai Phone +971 4 88608-26 Fax +971 4 88608-27 info@ae.ebmpapst.com www.ebmpapst.ae | +971 4 88608-26 | +971 4 88608-27 | info@ae.ebmpapst.com www.ebmpapst.ae |

**Vietnam**

ebm-papst Vietnam Representative Office Room #102, 25 Nguyen Van Thu Street District 1 VN-Ho Chi Minh City Phone +84 8 39104099 Fax +84 8 39103970 linh.nguyen@vn.ebmpapst.com | +84 8 39104099 | +84 8 39103970 | linh.nguyen@vn.ebmpapst.com |
Australia
- **Australia**
  - **ebm-papst A&NZ Pty Ltd.**
  - 10 Oxford Road
  - AUS-Laverton North, Victoria, 3026
  - Phone +61 3 9360-6400
  - Fax +61 3 9360-6464
  - sales@ebmpapst.com.au
  - www.ebmpapst.com.au

- **New Zealand**
  - **ebm-papst A&NZ Pty Ltd.**
  - 102 Henderson Valley Road
  - NZ-Henderson, Auckland 1230
  - Phone +64 9 837-1884
  - Fax +64 9 837-1899
  - sales@ebmpapst.com.au
  - www.ebmpapst.com.au